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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

AUGUST, 1946

Aerial View of Waterside Operations to Control Staten Island's $2,000,000 Ferry Terminal Fire (See Article Inside).

A CASE - SHEPPERD - MANN PUBLICATION

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to Save Life!

The resuscitator is the most effective apparatus yet made for the saving of human life from asphyxia due to smoke, gas, shock or drowning.

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

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FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

Bang!—Goes Another Record!

SOMEBODY once said that records are only made to be broken! Certainly that appears to be the case in the fire service field.

● Fire losses are setting new highs; fire forces are responding to more alarms, fighting more fires than for decades; fire apparatus and equipment builders and distributors are doing more business than ever before. In short, the "big business" of fire prevention and protection is at a new peak!

● Two recent events reflect this accelerated activity: first, the 73rd Annual Conference of the International Association of Fire Chiefs in Cleveland last month shattered all records for attendance, number of manufacturer-exhibits and displays, and interest in the business sessions.

● Secondly, the "July Conference Issue" of FIRE ENGINEERING upset all publishing precedent in the fire service field and proved to be the biggest and finest book in all our 69 years of existence—bigger, and finer in the quality and quantity of its editorial and advertising content, and in the number and importance of its readers and advertisers.

● Just as there can be no let-up in the fire service's war against national fire waste, so FIRE ENGINEERING will continue its effort to set up new records in publishing excellence for its ever-growing army of readers.

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York 18, N. Y., also publishers of *Water Works Engineering, Sewage Works Engineering*, etc. ¶Subscription price: U. S., Latin America and Canada, $2.50 a year; Foreign, $3.50; Single copies, 25c. ¶Member of Audit Bureau of Circulations and Associated Business Papers, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 3, 1879. ¶Contents of this issue copyrighted, 1946, by Case-Shepperd-Mann Publishing Corp. President and Advertising Director, KARL M. MANN; Vice-President and General Manager, I. HERBERT CASE; Secretary and Editorial Director, FRED SHEPPERD; Assistant Advertising Director, WALTER H. FREDRICKS; Advertising Manager, WILLIAM J. GIBSON; Circulation Manager, W. H. TOPHAM. CHICAGO OFFICE: W. S. CLEVENGER and L. M. ROCHE, 6 No. Michigan Ave., Chicago 2, Ill.; SAN FRANCISCO: CHARLES H. WOOLLEY, 605 Market Street, San Francisco 5, Calif.; LOS ANGELES: AUGUST HAURIN, 6000 Miramonte Blvd., Los Angeles 1, Calif. ¶Printed in U. S. A.

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"Specialized Leadership"

the gang's all here... so's Mack!

THE volunteer fire department of **Carle Place, Long Island,** turned out for an inspection the day its new Mack arrived. The modern Type 45 Pumper puts Carle Place on the list of more than a thousand American cities now protected by Mack Fire Apparatus.

The Mack Type 45 is especially desirable for fire departments working on limited budgets. It's a Mack development that brings progressive fire engineering advances within reach of all communities.

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Why not give *your* town the added measure of protection you get with a Mack? Call your Mack man.

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Performance Counts!

If your community needs additional fire-fighting equipment or replacements, think of Mack. Remember, Mack Fire Apparatus is backed by the greatest engineering resources in the industry.

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for AUGUST, 1946

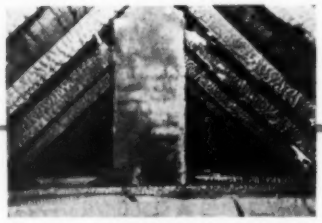
501

TOTAL LOSS AVERTED BY WaterFOG

Bad rural Class A Fire with half-hour start extinguished by two Rockwood SG-40 Nozzles in 20 minutes . . . with only 50 psi nozzle pressure.

Fire in the home of Harold E. Morgan, Wilbraham, Mass., started in upper bedroom. Firemen made first entry by ladder through second-floor window facing camera.

SG-40, the triple-action nozzle — discharges high-velocity WaterFOG, low-velocity WaterFOG from extension applicator, or straight stream. Approved by Underwriters' Laboratories, Inc. and Associated Factory Mutuals. Write for Bulletin C-501.



View in attic shows deep charring indicating extent to which fire had gained headway before application of WaterFOG.

View of one end of living room showing very little fire or water damage below the second floor.

If the Wilbraham, Mass. Fire Department, headed by Chief Ralph E. Tupper, needed proof that Rockwood WaterFOG was effective on Class A Fires, they got it on February 11, 1946.

Arriving at this rural home after a delayed call and a slow run over icy roads, they found the upper section well involved, the fire having about a half-hour headway. The owner had resigned himself to a total loss.

With two ¾-inch booster lines equipped with ¾-inch SG-40 Rockwood WaterFOG Nozzles, they checked the fire in 8 minutes . . . completely extinguished the fire in 20 minutes. Source of water was apparatus tanks and a nearby well. The 110 psi at the pump was reduced to 50 psi at the nozzles by the friction of the 200-foot lines.

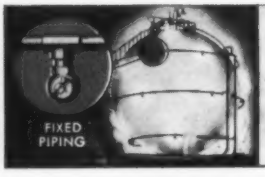
Chief Tupper's conclusion was that only the cellar hole of this five-room home would have been left if they had been obliged to use straight streams with such a limited supply of water. The owner, a carpenter, was amazed at the slight fire and water damage.

More and more fire departments and industrial plants are adding WaterFOG to their straight-stream facilities. The extra value which the Rockwood SG-40 Nozzle gives you is that it supplies both . . . because the control handle changes it from WaterFOG to Straight Stream instantly.

Write for Bulletin 123 describing how WaterFOG puts out fires faster, protects men and equipment, reduces water damage. Natural-color movies (16 mm.) also available. ROCKWOOD SPRINKLER COMPANY, 54 Harlow Street, Worcester 5, Massachusetts. *Specialists in Fire Protection Engineering, Equipment and Installation since 1907.*

Water Engineered by Rockwood Cools, Confines, Smothers Class A and Oil Fires

ROCKWOOD WaterFOG



The
ALL-WEATHER

TRADE MARK REG. U. S. PAT. OFF.

Write for an American-LaFrance-Foamite salesman to show you samples before placing your next order for Fire Hose

AMERICAN-LAFRANCE-FOAMITE Corporation
ELMIRA · NEW YORK · U.S.A.

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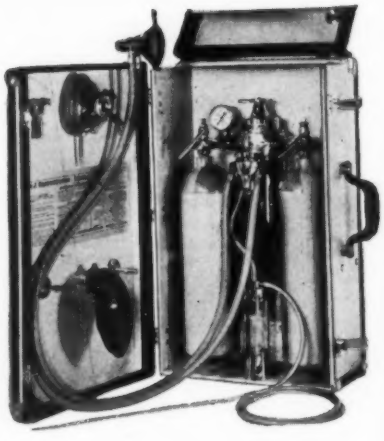
with the

E & J

RESUSCITATOR
INHALATOR and
ASPIRATOR

MINNEAPOLIS is another progressive municipality that believes in providing its citizens with the best life-saving equipment that money can buy. In 1938, the Minneapolis Fire Department purchased an E & J Resuscitator. Until recently this was used by a Fire Company averaging 165 calls a year, which gave ample opportunity for demonstration of the effectiveness and dependability of this mechanical breathing equipment. The result—in order to get the advantage of all up-to-the-minute improvements, Minneapolis recently repeated with the latest model E & J!

Wherever you go, the country over, you'll find E & J's the first choice of the nation's fire service. Built-in dependability plus engineering "know-how" make the E & J Resuscitator an essential part of any fire department's rescue equipment.



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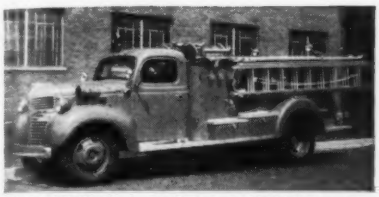

BAY SHORE, L. I., N.Y. *Standard FMC Fog Fire Fighter delivered to Bay Shore Fire Dept.*

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. . . that PROGRESSIVE fire departments are shifting to FMC High-Pressure Fog Fire Fighters.

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OLD FORT, OHIO. *Standard FMC Fog Fire Fighter delivered to Old Fort Volunteer Fire Dept.*

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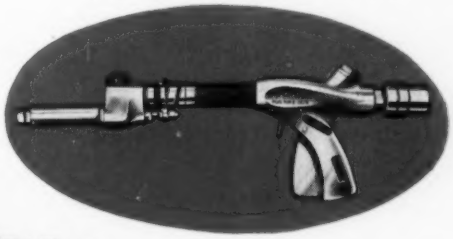


KENSINGTON, MD. *Standard FMC Fog Fire Fighter recently delivered to Kensington Volunteer Fire Dept. No. 7. Carries its own water supply—provides two guns of 30 gallons each at 600 lbs. (or more) nozzle pressure—complete in every respect.*

FMC *Original* HIGH-PRESSURE FOG FIRE FIGHTER

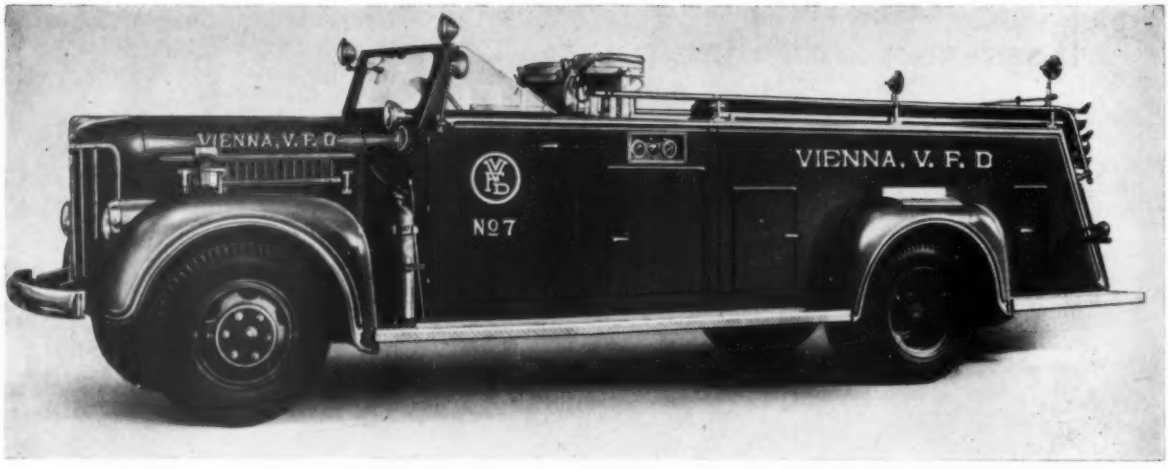
CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO., 709 HAZEL ST., LANSING 4, MICH. • BEAN-CUTLER DIVISION, 409 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS

MAXIM *Dependable* APPARATUS



Built to last by New England craftsmen who have been building fire apparatus and only fire apparatus through two generations.

MAXIM MOTOR COMPANY

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FIREMAN FREDDIE SAYS: *Efficiency on the "fire line" means Akron Brass Couplings in the hose line.*

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Dependability — AT YOUR Command!

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Instant and *dependable* performance — *every time* — is demanded of all fire fighting equipment — and year after year, Ahrens-Fox Apparatus has more than met that demand. Dependability is *built* into every piece of Ahrens-Fox Apparatus. Always ready for the worst of fire fighting conditions, an Ahrens-Fox Pumper will get there — *fast* — and do its job.

Now, with a large, new postwar plant, the Ahrens-Fox Corporation, backed by 41 years of manufacturing experience, offers you its finest in modern fire fighting equipment. And a greatly enlarged Service Department provides unequaled facilities for keeping all Ahrens-Fox Apparatus in like-new condition — for many additional years of dependable performance.

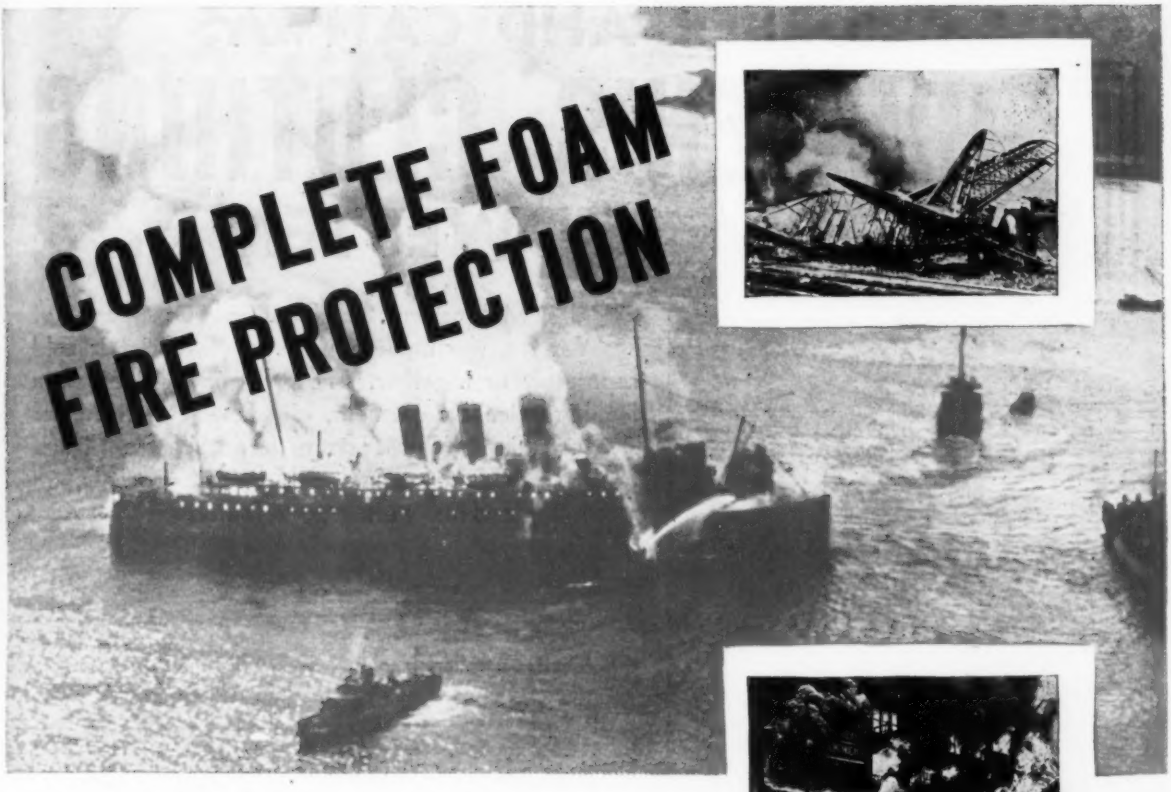
It will pay you to investigate the latest Ahrens-Fox Pumpers before investing in new apparatus—your inquiry will receive prompt attention.

AHRENS-FOX

● Model H.C. 1000 g.p.m. Centrifugal Type Triple Combination Pumper with Three Man Enclosed Cab.

A PUMP FOR EVERY PURPOSE

THE AHRENS-FOX FIRE ENGINE CORP. — CINCINNATI - 12 - OHIO



NATIONAL FOAM, mechanical or chemical, puts out *and keeps out* . . . petroleum, marine, chemical, aviation, industrial fires

NATIONAL FOAM products, veteran fire fighters afloat and ashore, solve every hazard by specific measures applied to specific problems. Details of any fire problem are promptly met with definite recommendations. Whether mechanical or chemical Foam is needed, National makes it, with the particular equipment to apply it quickly and efficiently.

Engineering staff and field men, trained to solve difficult fire fighting problems, are at your service without obligation. What National Foam has long done for the petroleum, marine, chemical, aviation and other industries, it is ready to do for you.

National Foam prevents fire from spreading by thorough insulation. A thick, tough, enduring Foam blanket prevents flashbacks by sealing off flame-feeding oxygen. The fire itself is quickly suffocated by National Foam.

There is no substitute for experience in saving American industry from fire losses. Your problems are our problems—calling for specific answers. Call, write or wire for them today.

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SPECIALIZING IN FOAM FIRE PROTECTION

Packard Building. Philadelphia 2. Pa.

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FIREMEN'S CLOTHING
FROM MIDWESTERN

THIS Midwestern Combination Suit, made of Vanitex, the modern waterproof fabric, is sold separately or together. The "Mackinaw Coat" is a highly serviceable garment, with flexible elastic inner sleeves; adjustable collar strap, detachable wool lining, Midwestern safety snaps, two outside pockets, 6" storm flap and many other good features.

The Coat:

- Adjustable collar strap
- Reinforced collar band for lining
- Lining attached with quick snap buttons
- Corduroy lined collars
- Reinforced, double stitched seams
- Vertical seams in sleeve shoulders
- Inside of fabric, heavily napped cloth
- Two outside pockets
- Wool detachable lining
- 6-inch storm flap

Regular Firemen's Boots AVAILABLE!

Regular Firemen's Boots, ¾ length, reinforced instep, felt linings, available now. Available soon, regular Firemen's Knee Boots. See your local Midwestern dealer or write the factory.

See your Midwestern Mfg. Co. dealer for prices or write the factory.

The Pants:

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Is your fire service burdened with inadequate or unwieldy apparatus when costly fires hit your community?

There is no need to face the old story of "Too little and too late". Investigate the many advantages offered in Ward LaFrance Triple Combination Pumpers. There is a Ward LaFrance *engineered* pumper that can give your community the full protection of modern fire-fighting apparatus.

Benefit from the many years of fire apparatus experience offered by Ward LaFrance. Write today outlining the particular requirements of your community. Our Engineering Department will gladly furnish competent counsel in helping to solve your problems.

FAMOUS FEATURES

- Full powered 6 cylinder engines designed specifically for fire fighting apparatus assure dependable pump performance under all conditions. There is no "paper horsepower" in a WARD LaFRANCE.
- Exceptional maneuverability gained by special front axle construction. Variable rear axle ratios to suit local performance requirements — speed for level country; climbing ability for hilly country.

WARD LAFRANCE TRUCK DIVISION
Great American Industries, Inc.

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Republic's Exclusive Provar Process

SCIENCE AGAINST Fire

THE combating of fire with hose is man's basic approach to its control. Nature, which contributes to human carelessness by creating conditions favorable to combustion, puts an additional handicap on the fire fighter by destroying cotton jacketed hose with mildew and rot. Termites and vermin also take their toll. It is a case of man's traditional reliance on science to defeat nature that these handicaps have been eliminated from his battle with fire. The development of Provar Process by Republic technologists has proved a permanent safeguard against nature's constant threat to hose jackets. Complete your own use of science in fire fighting by specifying Provar Process to your nearby Republic Distributor.

Unretouched photo shows results after samples were saturated with water and exposed for six months to moist atmosphere, under conditions favorable to growth of mildew. Sample at left had been treated by the Provar Process.

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WE ARE PARTICIPANTS IN THE OWNERSHIP AND OPERATION OF NATIONAL SYNTHETIC RUBBER CORPORATION

FOR MODERN PROTECTION AND APPEARANCE...

"THE HAT THAT TAKES CARE OF THEIR HEADS!"

M·S·A
Streamlined FIREMAN'S HELMET

Check these Features!

- √ One-piece, high pressure molded of laminated bakelite
- √ Tremendous resistance to fracture
- √ Best protection against electric shock
- √ Can't soften, swell or gain in weight
- √ Reinforcing crown ridge
- √ Self-ventilated, cool and comfortable

Soft leather sweatband
—adjustable crown hammock
—sturdy chinstrap!

Better head protection and easy wearing comfort ride with the fireman on every run—stay with him on the job, and serve him every minute—when he wears the M.S.A. Streamlined Fireman's Helmet! This most popular modern helmet's correct proportions and streamlined design deflect the force of blows and bumps, keep hot water and embers from face and neck, add smartness on parade. Heat and moisture cannot soften or deteriorate the highly fracture-resistant shell . . . write for the facts in Bulletin DX-5!

MINE SAFETY APPLIANCES COMPANY
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The FIRE ALARM FACTOR

The Fire Chiefs Were Right

In recognition of their responsibilities with respect to the National Defense Program the International Association of Fire Chiefs at their Annual Conference in August, 1940, declared that certain fire defenses including the municipal Signaling Systems throughout the country, were woefully inadequate and recommended that steps be taken to correct the situation. Such steps have not been taken and the fire record proves the Fire Chiefs were right.

Year	*Fire Losses*	*Percentage Increase Over 1939*
1940	$285,878,697.00	4%
1941	303,895,000.00	10
1942	314,295,000.00	14
1943	373,000,000.00	35
1944	423,458,000.00	53
1945	455,329,000.00	65

Fires, with few exceptions, are small in their inception and there is ample time for the orderly procedure of pulling a box — *if the box is available* — thus instantly energizing the extinguishing agencies and suppressing fire with but small loss. Too many cities are content to install boxes in the central mercantile districts and pay little attention to the outlying residential and manufacturing districts where excessive fire losses are becoming alarmingly frequent.

How about YOUR *city? Why not check up now and urge your city government to correct any deficiencies in the Fire Alarm System that are found to exist? Remember, fire waste follows every Delayed Alarm.*

Write for illustrated booklet — "It Can Happen Here"

THE GAMEWELL COMPANY

NEWTON UPPER FALLS 64, MASSACHUSETTS

In Canada: Northern Electric Company, Limited, Montreal

FIRE ENGINEERING

AUGUST, 1946 VOL. 99, NO. 8

With the Editor

Are We Weak In First Aid?

Before the war, training in first aid procedure was being widely carried out in the fire service. The badge of the first aider, the red cross, was becoming quite in evidence throughout the service, particularly in the volunteer departments.

The war gave impetus to this training and many firemen who had had advanced first aid training were called upon to instruct civilian defense personnel in this useful asset.

Since the end of the war and the disbanding of civilian protection forces, the interest in first aid education and preparedness has waned, although the need of first aid training is as great as ever.

Firemen are called upon to undertake many dangerous tasks—tasks which make them liable to injury and even death. There is hardly a fire at which there is not need for the exercise of first aid of some sort, whether in treatment of injuries sustained by fire fighters or of civilian victims. Lack of fundamental knowledge of first aid has undoubtedly cost the lives of many persons, firemen included. A trifling cut or bruise or sprain improperly treated, or ignored, many later incapacitate the victim, perhaps permanently. Or it may result in death. On the other hand, knowledge of what to do, and when and how to do it in an emergency, has definitely reduced casualties and lost work hours.

It is time to rehabilitate training in this important phase of the fire service—to make it as much a part of every fireman's education and training as the orthodox basic evolutions. Further, it is a wise policy to equip every company in every department with up-to-the-minute emergency first aid kits.

Is Forewarned Always Forearmed?

The old axiom "Forewarned is forearmed" might have been all right for others in days of old but it doesn't seem to apply very well to the fire service, which has for years been forewarning the the nation of disastrous fires and of the need of being prepared to meet them—all, regrettably enough, to little or no avail.

Surveys conducted by FIRE ENGINEERING have repeatedly disclosed the lack of not only basic fire fighting equipment—pumpers, ladders and emergency trucks, and so on, but of woeful shortcomings in necessary accessories and tools, such as portable lighting equipment; breathing apparatus; deluge sets; turret and ladder pipes; fog nozzles, etc. And as for life nets, voice amplification, public address systems, electronic and other means of on-the-fire ground emergency communications, in too many fire departments there is none.

Of course, a net, or deluge set or self-contained breathing device may be carried on a piece of apparatus for years without being called into use. But, as the recent hotel fires in Chicago and Dubuque have proven, when they're needed, they're vital and tragically needed, and nothing else will take their place!

Surely with this evidence before them, chief officers responsible for maintaining their departments at top efficiency, and who know that they are short these and related essential tools of the trade, will revise their budgets and their requests of their local government for such indispensable life and property saving facilities. The fact, also, that deliveries of such equipment may be slow is all the more reason for getting action now!

And here's a thought: In ordering new apparatus, i. e., pumpers, ladder trucks and so on, make sure that the specifications include all necessary tools and appliances.

Think back: many of us can remember when we bought a motorcar that it was minus bumper, headlight, and horn. Today we get all the essentials in one package! Why shouldn't the fire service include in its apparatus specifications the entire package—and ask for and take delivery of our apparatus fully and adequately equipped!

Fred Sheppard

Costly Three Day Fire Taxes New York's Fire Forces

Staten Island's Worst Fire Breaks All Records for Duration, Loss and Casualties

By ROI B. WOOLLEY

Editor's Note: On Tuesday, June 25, last, the New England Association of Fire Chiefs was meeting in Portsmouth, N. H., while the Eastern Association of Fire Chiefs was holding the second day of its Annual Convention in New York.

Ironically enough, at about 2:00 P. M., while the Eastern chiefs were listening to Arthur Pfeister, former Lieutenant Commander, USCG (Ret.) deliver his address on "Protecting New York Harbor From Fire During the War," fire played one of its tragic and costly jokes. Within the span of time it took Commander Pfeister to tell his story, a raging blaze had involved the entire St. George Ferry Terminal on Staten Island, cutting off ferryboat communications with Manhattan and setting in action a sequence of dramatic events that had no parallel throughout the entire period of the war itself.

FIRE ENGINEERING is pleased to bring its readers the first comprehensive account of this fire and the operations (at least in part) of the New York Fire Department in meeting the challenge which it presented.

The editors are especially grateful to officials of the Fire Department, the Department of Marine and Aviation, the U. S. Weather Bureau and to a number of our regular contributors, including Messrs. Jerry Daly and Hugh McNair, for their assistance in helping to make this report as detailed and authentic as possible within the brief time available for its preparation.

THE fire, starting shortly after noon Tuesday, June 25, and which destroyed the St. George Municipal Terminal on Staten Island, with a loss of over $2,000,000, is recorded as the worst in the history of the Borough of Richmond.

Before the stubborn blaze was officially declared "out," over 3,000 firemen—one-third of the city's entire fire-fighting force, had had their turn at fighting it; over 300 of them required medical or surgical treatment of one kind or another. The near-conflagration broke a number of other departmental records, and tied that for sustained fire duty established in 1932, when the Cunard Pier on the North River burned over a period of three days, causing 300 injuries to fire force personnel.

It was the first time that the Manhattan-St. George ferries were cut off from fire department service, and the first time New York City's fire companies were forced to reach Staten Island through New Jersey, by way of the tunnels and bridges. It also sets the record for the number of fire-fighting units dispatched to the Borough of Richmond (Staten Island) from other Boroughs and the 12 to 20 mile response of apparatus from their quarters in downtown Manhattan to the St. George Terminal on the multiple alarms is believed to establish a record for miles-traveled by motorized units to reach a fire within the city.

For the first time since it was organized, it is reported that a member of the Bureau of Fire Alarm Telegraph lost his life while on duty at a fire.

Marine and Land Forces Fight to Control Ferry Blaze

Aerial view shows southeastern end of ferry house, looking northwest. A Navy fireboat (lower center) is located in slip #6. Fireboat "Strong," Engine 51, is operating in ferry slip #5 (immediately in rear). Train platforms, where fire started, are seen at lower left with huge concrete ramp, leading to upper deck of ferry house above and B. & O. Railroad yards in distance. Pumpers are shown drafting water from Bay.

Possible Major Disaster Narrowly Averted

Only a lucky accident of timing prevented what might have been a major catastrophe. Starting at a railroad platform, outside the Terminal, the blaze spread with incredible swiftness, but just after 500 incoming passengers had departed, and as the ferry "Knickerbocker" pulled safely out for Manhattan at 2:00 P. M., with 700 passengers aboard.

This fortuitous circumstance left the big upper levels of the railroad and ferry waiting rooms almost deserted when the flames roared up. Further, the fire started at an off-peak period. Had it occurred during the rush hour, a serious panic might have ensued, with great loss of life.

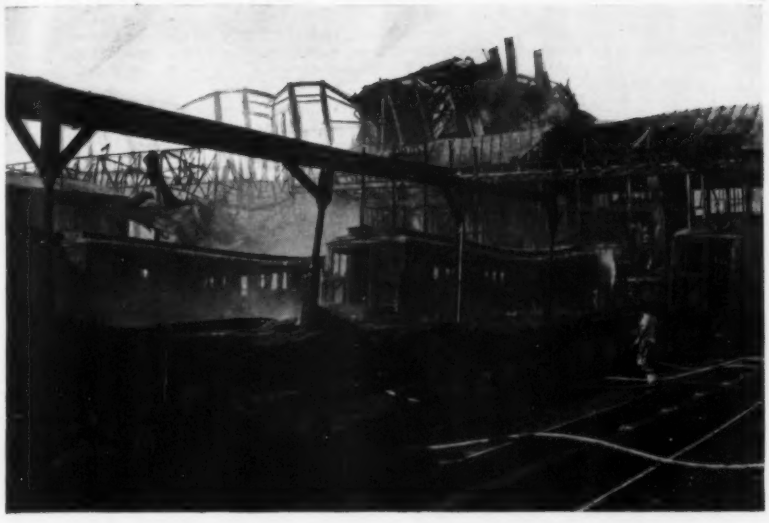
The fact that there was no serious life hazard permitted first arriving firemen to concentrate most of their efforts on attempting to confine the blaze, but because of the structural and other conditions which favored the fire, described later, this they were unable to do. Even before all the Staten Island companies summoned on three alarms (within seven minutes) could get into action the fire was out of control.

Mobilizing Fire Forces a Problem

Although the possibility of a serious fire in the old Terminal had long been considered by chief officers on the Island, it is understood no preparatory plans had been made to provide adequate aid from other Boroughs in the event the ferries were cut off by fire.

Notwithstanding this factor, the speed with which officers who were faced with the initial crisis sized up the situation, laid their plans and put them into action no doubt prevented an even greater loss.

Faced with the unexpected curtailment, if not complete loss of aiding apparatus and men from other Boroughs through the termination of ferry service, Chief Hennessy, Commanding Officer of the Borough's forces, followed up the 3rd alarm with the request to the Rich-



Evidence of Fire's Great Heat Is Shown in Buckled Steel Cars

The Staten Island fire is said to have started in the leading car of Staten Island Transit train on Track 1 (not shown, at right of picture), involving platforms and sheds and extending into railroad waiting room, rear, thence to ferry house, wrecked steelwork of which is shown in distance.

mond fire alarm headquarters for twelve pumpers and four fireboats.

Then, anticipating the further delay that would ensue if these units followed normal procedure and 'located' at empty Island firehouses, he dispatched aides to flag down the incoming apparatus at the New Jersey bridges and have them report directly to the fire. He knew that the dispatchers would find other forces to protect the uncovered Borough areas. The strategy called for mobilizing the utmost possible land and marine fire forces in the shortest possible time. In this respect, Chief Hennessy's and the fire alarm bureau's strategy functioned. Although once involved, the ferry building was beyond saving, but above ground extension of the fire was blocked.

Subterranean Fire Hard to Fight

Within almost a matter of minutes, the spectacular blaze had expended itself in wiping out the Terminal buildings, and then began the Department's gruelling struggle to locate and subdue the "subterranean" fire, which it was found had worked its way under the concrete roadway and approaches, to the heavy creosoted supporting members.

At about 6 P. M. the fire in the main structure appeared under control and emergency ferry service to Manhattan was resumed, using the 39th St. Ferry Slip (Slip #5).

At 9:45 P. M. as the infiltrating fire threatened to undermine the 39th Street ferry structures, ferry service was discontinued. A little later extra details of firemen were ordered in, along with pavement breakers, compressors and other special equipment for opening up the pier docks to get at the fire beneath. Using compressors, and aided by Navy and other personnel, firemen were forced to labor in short shifts, as the smoke from the creosoted woodwork caused acute inflammation of the eyes and respiratory system.

It is said to have taken two and a half hours to cut out one 30-inch opening. Over fifteen of these had to be made to accommodate the several types of distributors, fog nozzles, cellar and sub-cellar pipes used.

As the battle wore on, firemen, where and when possible, operated from punts, floats and rowboats to reach and control the under-pier fire.

Naval personnel from the naval base at nearby Tompkinsville, many of them wearing Navy-type masks, worked shoulder to shoulder with the firemen. They loaned the fire department a number of adapters so that the Marine Division's recently acquired, but thus far unused, portable pumps could be placed in service. Ten of these pumps had been ordered for each of the active fireboat fleet. They are 110 GPM at 60 PSI, or 60 GPM at 110 PSI, but they required adapters to convert them from naval to fire department use.

Early on the morning of Wednesday (3:10 A. M.) the advancing fire periled the 69th Street slip accommodating the ferry to Brooklyn, and this last connecting ferry route with other boroughs was discontinued, while a sixth fireboat was ordered in.

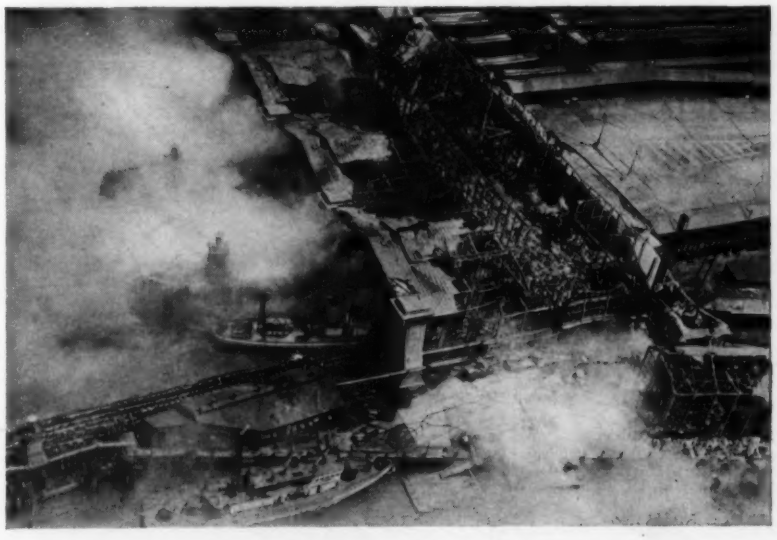
These were the most anxious hours for the city, with only the Staten Island-New Jersey bridges linking the rest of the municipality of Richmond with the borough. But dogged work of the fire fighters alternately hindered and helped by tides, held the advancing fire and finally snuffed the last ember. As is shown in the chronological account, it was the afternoon of Thursday, the 30th, before the last Richmond land company, returned to quarters.

Meanwhile, the Department of Marine and Aviation struggled against almost unsurmountable odds to establish ferry service, at least for pedestrian commuters, thousands of whom were marooned in Manhattan the night of the fire.

Large Area—Combustible Construction*

Located at the northerly tip of Staten Island, the St. George Municipal Ferry Terminal is used by approximately 60,000 persons and 2,000 vehicles daily in travel between the Boroughs of Richmond and Manhattan and Brooklyn. The great bulk of the traffic is handled by a fleet of large municipal ferryboats which ply between the St. George Terminal and the Battery. Another municipal line, operating smaller craft, connects with 39th Street, Brooklyn, and in addition,

*FIRE ENGINEERING is indebted to the Department of Marine and Aviation for this information, Commodore Frederick G. Reinicke, Commissioner; Captain Lewis H. Rabbage, Chief Engineer; Commander Stephen P. O'Regan, Director of Ferry Operation.



Fireboat Crews Took Punishment When They Pushed Into Slips

Destruction of the 2,500-foot ferryhouse is shown in this aerial view, which was taken twenty-four hours after start of the St. George terminal blaze. Two of city's marine fireboat fleet are shown at what was lee side of fire (northwest corner of terminal), operating on substructure pier extension of fire and overhauling. View shows ferry slips Nos. 1, 2 and 3. Huge concrete approach ramp that led into upper deck of ferry house and over a city block wide, shown at center, right. Wrecked train platforms and sheds at upper right above ramp.

there is an electric ferryboat service from St. George to 69th Street, Brooklyn. Traffic via these latter routes is said to approximate 2,000 persons daily, and a great many vehicles.

The St. George Terminal included both the huge double-decked municipal ferry house, occupying a plot approximately 2,500 feet by 200 feet, and the waiting room and terminal of the Staten Island Railroad, the electrified route used by about 40% of commuters. This railroad terminal connected directly with the larger ferry building.

Passengers arriving and departing by train reached the upper and lower levels of the ferry house, built forty-one years ago, through the railroad waiting room which, in turn, was reached by means of wooden inclines leading from the railway track platforms and from a large concrete ramp connecting with the upper floor of the ferry terminal.

The upper deck of the ferry building extended some distance out over the bulkhead at the three principal ferry slips (Nos. 1, 3 and 4 on the accompanying diagram) so that passengers could be loaded and unloaded direct from ships to the ferryhouse upper deck via adjustable leveling ramps or bridges. Vehicles were loaded and unloaded by way of leveling ramps leading from ferryboats to the lower level and roadway, which extended the entire length of the ferry building and connected with each ferry slip.

The ferry building was constructed of wood sheathing on steel framework, covered with corrugated metal siding. There was considerable ornamental sheet and cast iron in the waterside slip arches and in the windows and other openings. Roof-trusses were steel and the large, unbroken roof was of wood sheathing, metal covered.

The building was located almost entirely over the water and was supported on heavy piling. The superstructure was heavy timber and concrete on piles. The flooring was heavy concrete except that on the lower level the waterside wing extensions (leading to the slips) had wooden decks.

As will be noted from the accompanying diagram, with the exception of the 69th and 39th Street Brooklyn ferries, all other traffic in and out of the Terminal was funneled through the lower level of the ferry building. Its destruction, even though the bridges and slips were saved, cut off that traffic, at least temporarily making impossible response of fire companies from the other Boroughs except by means of the smaller Brooklyn ferries, and the Island's three span bridge connections with New Jersey.

The ferry slips were constructed of wood piling, wales and fenders, and were not treated with creosote. They were undamaged by the fire.

Located on the upper level of the ferry building were the main waiting room, rest rooms and various concessions, the post office and telegraph office and various change booths. Fire retardent dividing walls or partitions separated the main terminal from the rest rooms. Above the upper level was located a space for storage of records.

The one-story Staten Island Railroad waiting room, adjoined the ferry building on the south, was connected thereto by numerous open passageways on the south side facing the railroad spurs. There were five of these spur tracks, the easternmost being parallel to Jay Street and the vehicular ramp to the lower level of the ferry house. Between tracks ran wooden platforms on lattice wood supporters. Over each platform was a wood storm shed supported on wood posts and cross members. A similar two track terminus existed on the southwest corner of the terminal.

These spurs, of varying length, but each long enough to accommodate a train of cars, ended almost against the structure containing the railroad waiting room.

Conditions Were Favorable to Fire

The size and age of the Terminal; its combustible construction; lack of fire stops; the large expanses, below and above, open to the wind; the metal sheathing on wood; unprotected windows and other openings; vast broken roof area, and the weather conditions all favored the fire, once it had gained headway.

In the matter of fire protection, although both the ferry building and the railroad terminal were equipped with regulation standpipes and hose lines located on both levels, there were no sprinklers.

It is reported that at least one hose line, operating off a standpipe, was used by Terminal employes before the arrival of the fire department, in the attempt to rescue a woman believed to be a ticket agent for the Rapid Transit Company, who was trapped by the fire.

The Terminal maintained a watchman service twenty-four hours a day and there were four fire alarm boxes located strategically throughout the area directly connected with the Borough fire alarm headquarters. The first alarm for the fire was from Box 13, one of these four Terminal boxes located on the west side of the upper level ramp.

There was reported to be a scarcity of hydrants, either low or high pressure, within effective range of the Terminal buildings and slips. Some years ago, under the direction of the late Deputy Chief John Spencer, dockside "seahydrants" or permanent suction connections for pumpers were installed. It is reported that some of these were used by the department although the majority of the dozen or more pumpers that operated from draft, used their own suctions. Street hydrants, where used, necessitated stretches of 800 feet and longer.

The Terminal was periodically inspected by members of the fire department and no serious complaints as to fire prevention or protection violations had recently been recorded. Storages of gasoline and oil, which were reported to be in the storeroom of the Department of Purchase, in the Terminal area had all been approved by the fire department. One ferry slip (No. 2) was reserved for the handling of fuel; it is reported that two fuel-laden barges moored in that slip at the start of the fire were promptly and safely towed out of danger by tugs.

Terminal's Nine Slips Undamaged

The total number of slips in the Terminal area was nine, including the one slip used by the privately owned electric ferry to Brooklyn. In order to fully appreciate the complications involved in fighting this fire, it is well to understand the number, extent and purpose of these slips. The following table, and the

Manhattan Firemen Take Roundabout Route to Reach St. George Terminal Fire

Responding on third and later alarms, Manhattan fire forces, unable to use the Staten Island ferries, took the 12-20 mile overland-underwater route, via Holland Tunnel and New Jersey highways to Bayonne Bridge and Staten Island thoroughfares direct to the burning ferry terminal.

diagram on the following page, will be of help in this connection:

Slip No.—	Used For	Extent of Fire Damage
1	Ferry to Manhattan	None
2	Used for fuel barges	None
3	Ferry to Manhattan	None
4	Ferry to Manhattan	None
5	Ferry to 39th St. Brooklyn	None
6	Repair slips for layup. Cannot be used to dock passengers. No facilities for landing. Undamaged.	
7		
8		

Note: A 9th slip was located between Slips 6 and 7 and was used by the electric ferries to 69th St. Brooklyn. This slip was undamaged by fire.

Note: II: "Pier 6" erroneously confused with "Slip 6," and which was used temporarily for a few days after the fire, is located at Tompkinsville, about one mile distant from the Terminal.

Located in the Terminal area, adjacent to and south of slip No. 8 is the quarters and dock of Engine Co. 51, the New York fireboat William L. Strong.

About 100 feet northwest of the Terminal, is a large shed used by the Navy (partially destroyed) and some distance beyond this are two large piers of the B & O Railroad, damaged in a 5-alarm fire January 25, 1946.

Weather Conditions

Tuesday, June 25, was a clear, hot, dry day, according to Weather Bureau records for New York City. At 2:00 P. M., the start of the fire, the thermometer registered 81 deg. F; humidity was 35 per cent (which is below-average for dryness at that season); the barometer read 30.1 inches and there was a 16-mile wind blowing from the southeast, or almost parallel to the length of the ferry building, from which direction it was ideal for furthering the spread of the fire.

According to the Bureau's records, the peak of wind velocity for the day was reached shortly before the start of the fire. It is also reported that there were no marked changes either in direction or strength of the wind during the balance of the day.

Cause Believed Cigarette

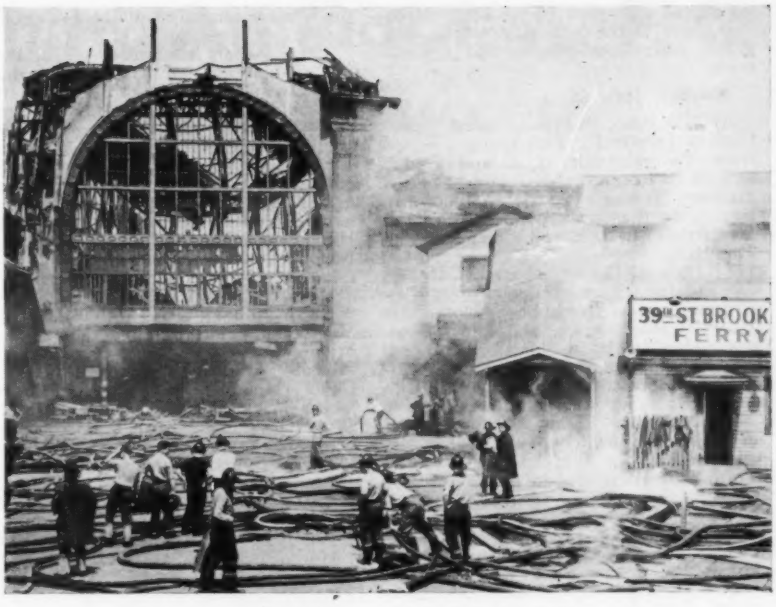
According to a report made to Fire Commissioner Frank J. Quayle by Chief Fire Marshal Thomas P. Brophy, the fire "definitely" started in the wooden platform between Tracks 1 and 2 of the Staten Island Rapid Transit System, in the northeast pocket of the Terminal.

The fire, the cause of which is still undetermined, may, according to Marshal Brophy, have resulted from a discarded cigarette coming in contact with combustible material under the platform.

The fire swept up the west side of car 305, the head car of the train on Track 1, and then to a wooden shed over the platform. From there it jumped to the two-story terminal building, used by the railroad as a waiting room, and then burned rapidly through the entire Terminal, Marshal Brophy reported.

It was determined that the first sign of the fire was a puff of smoke and flash from under the head car, followed at once by flames which raced down the east end of the platform.

The speed with which the fire raced from the covered platform or train shed into the terminal building, despite the presence of alert persons reported near the scene of the outbreak, is mystifying. Certain it is that by the time first firemen had water on the blaze, the fire had reached multiple-alarm proportions.



Firemen Fighting Subsurface Extension Twenty-Four Hours After Outbreak of St. George Ferry Fire

Closeup view of operations at southeast corner of wrecked ferry house. Gruelling job of opening up pier decks and extinguishing fire traveling through substructure in oppressive heat knocked out scores of firemen.

Witnesses reported hearing two explosions which gave rise to the erroneous reports that an oil tanker at one of the nearby slips had blown up.

Further evidence of the rapid spread of the fire is found in the account of the casualties. Mrs. Margaret White, a railroad ticket agent, was trapped in her booth at the terminal when she tried to save the cash entrusted to her care. She made her way to a window ledge and four policemen endeavored to reach her by means of a ladder, while ferry employes wetted down the side of the building with a stream from an emergency hose line—the fire department not having reached the scene. A fiery blast from an updraft forced the policemen back, and as they renewed their efforts at rescue, the ledge gave way and the woman was hurled to her death in the blazing building.

Jeremiah Cronin, a municipal ferry stoker, was fatally burned when he was trapped in the burning terminal while assisting in rescue work.

Harold F. Clandenning, veteran lineman of the Bureau of Fire Alarm Telegraph, died as a result of exhaustion and smoke inhalation. He and five other employes of the Bureau were replacing a defective conduit and cable between a manhole on the ferry ramp and a cable box inside the millshop of the ferry house. They had two telegraph trouble trucks laden with gear. The men had completed their task and, following lunch, had returned to clean up when the fire struck. All the men managed to escape the flames, but Clandenning, who was 59, succumbed, following his collapse.

Auto Engineman Wm. McEvily, one of the crew, endeavored to save NYFD Truck 129 (used by the Bureau) by driving it out of the fire area toward the B & O yard only to find his escape blocked. He was caught with some other victims and forced to the water's edge, where the only prospect of survival appeared to be by swimming. However, they were all rescued by a motor launch.

The onrushing flames forced a number of other persons to go overboard, but all were saved.

Members of Engine Co. 51, (fireboat "Strong") first-due at the ferry terminal, found fire already working its way into the railroad terminal. As the illustrations show, they were able to prevent the total destruction of the northeast corner of this structure. But before they could get in position to cut off the speeding fire, it had roared into the main terminal building, and was beyond control.

Chronology of Operations

To the student of fire-fighting, the chronological receipt of alarms and subsequent dispatching and movements of the many units of fire apparatus to battle the threatening blaze should prove enlightening.

In reviewing this factor of the struggle, it is well to remember that the dispatching and maneuvering of the fire fighting forces of the world's largest city are handled through five central offices of the department's Fire Alarm Telegraph Bureau, one in each Borough of the City, and by the fire department's radio station WNYF. These Borough central stations and the fire forces in each are linked by a network of wires and, partially by radio. A complicated (to the uninitiated) system of telegraph signals is the basis for the dispatching and movement of the many and varied units of the fire department.

It is manifestly impossible to attempt to detail here all the communications, both telegraph, and voice which figured importantly in the three day struggle, from the moment Box 13 in the ferry house was pulled at 2:00 P.M. June 25 until the last Richmond company picked

up on the afternoon of the 28th. However, here is the summary of the telegraph alarms, responses and re-locations.

Tuesday, June 25.

At 2:00 P.M., Box 13 received (upper level of Terminal). This brought E. 154 from Tompkinsville, S. I. and E. 155 and L. 78 from New Brighton, and the fireboat "Strong" (E. 51) berthed contiguous to the terminal; also Chief Jas. McCarthy, 8th Div. and Chief Murphy, 31st Batt.

At 2:06—22-13 (second alarm), E. 153, 156 and 152 with L. 77 from West New Brighton and Rosebank. Also, Chief Hurton, Marine Div. and Chief Hennessy, Dep. Chief-in-Charge, Richmond. At this time four other Borough companies re-located as follows: E. 161 to 154, 157/156, 163/152 and L 79/77.

At 2:06, the Richmond Fire alarm central office switchboard went "out" and radio station WHGH (the NYFD's Borough station, tied-in with WNYF) substituted for traffic with the Manhattan central office, fireboats and with radio test car No. 124.

At 2:07—33-13 (third alarm), bringing E 160, 158 and 159 with the fireboat "Gaynor" (E. 223) from 37th street Brooklyn. From this point on no more ladder trucks responded. At this time, also, Chief Hennessy ordered the "out-of-service" signal struck for the Staten-Island (St. George)-Battery (Manhattan) Ferry. This was sent out at 2:13 when the Manhattan central office sounded signal 222-3-31, followed immediately by 88-33-13, which indicated to the department that not only the ferries were out but the fire was in the ferryhouse.

These signals had special significance, for six Manhattan companies which normally respond via the ferry to the Borough of Richmond to cover-in on 3rd or greater alarms. They momentarily caused some misgivings among officers of those companies, who were quickly set right by dispatchers and ordered to respond not via the Manhattan ferries but instead to use the Holland Tunnel to New Jersey, via Bayonne or Goethals bridges to Staten Island.

Motorcycle police were quickly provided by Jersey City authorities, who escorted the motorcades to the Bayonne bridge. Here they were flagged by a fireman stationed there by orders of Chief Hennessy, and directed not to locate in empty Richmond firehouses, as per assignment card, but to proceed direct to the fire.

The Manhattan companies which normally locate on a Richmond 3rd alarm are: *7/55, *6/163, 24/6, *10/161, *32/158, 203/31 (from Brooklyn to E 31 in Manhattan) *4/160, *31/159, 256/4 and Chief Kane, 3rd Batt. to 21st Batt. Those companies marked (*) went direct to the fire.

Meanwhile, on the "ferry out" signal, and upon receipt of the 3rd alarm, Commissioner Quayle and Frank Murphy, acting chief of department, raced for the 69th street Brooklyn ferry. Drs. Nilsen, Finestone and McGowan, of the Medical Bureau headed through the Holland Tunnel, with Chief Fire Marshal Brophy and Chief Val Fendrich of the Bureau of Fire Alarm Telegraph. Captains Jones and Irwin (in charge of fire department shops and apparatus) responded via the 69th street ferry.

At 2:14 signal 44-13 (fourth alarm) started E. 29, 27, 9, 55, 13 and 15 with Chief Kiffer, 1st Batt., Ambulance 1 and fuel wagon 1 on their way, via the Holland Tunnel. The fuel wagon was barred from use of the tube and detoured to the 69th street ferry. Locating: E. 19/29, 28/9.

At 2:23—55-13, calling E 7, 6, 10, 32, 4, (normally, on location on 3rd alarm in Richmond, these six units went to the fire directly.) Locating: 12/160, 30/158, 34/30, 205/12. In this response, E. 30 was disabled near the Bayonne Bridge, but was assisted by the Bayonne Fire Department, arriving at E. 158's quarters at 3:53 P.M.

At 2:26 the Richmond central office telephone switchboard was restored.

At 2:30 Chief Hennessy, via telephone (his car had only one-way radio) ordered "four or five fireboats" and 12 land companies, and at 2:40, he requested that all Richmond firemen report to the fire.

At 2:45—Borough Call, 88-13—77-22-1140 which, translated, called for the complement of companies normally due to respond to a 2nd alarm for Box 1140, Bay Ridge Blvd. and Shore Rd., Brooklyn, to report to Box 13, Borough of Richmond (the fire). This brought E. 241, 201, 242, 284, 278 and 228.

At 2:51 a second Borough Call—88-13—77-44-1140, bringing E. 247, 243, 282, 220 239, and 240.

At 3:09 special call for the fireboat "McClellan" (E. 66).

At 3:11 special call for the fireboat "Firefighter" (E. 57, Battery).

At 3:17, the Brooklyn central office received an alarm from Box 1550, Bedford and Clarkson avenues for a fire in a rooming house. This was while the Staten Island fire was at its worst. With 15 Brooklyn companies absent as a result of the ferry terminal fire, this caused immediate concern.

At 3:22, signal 5-1550-281 called for E. 281 to complete the first alarm assignment to that box, and at 3:25, the Brooklyn fire alarm office received a 2nd alarm, signal 22-1550 for that fire.

In the dispatcher's code, this 2nd alarm became at once a synthetic 3rd alarm in order to mobilize sufficient forces at that location. Therefore a 3rd alarm—signal 33-1550 went out from Brooklyn at 3:25 P.M. followed at 3:26 by 5-1550-220 special, calling E. 220 to the box to fill out the assignment.

Faced with this situation, at 3:42 P.M., Chief Murphy ordered the recall of off-duty firemen sounded for all Boroughs.

At 5:31 a special call was sounded for Fuel Wagon 3 to proceed to Richmond.

At 6:00 the recall was rescinded in the Bronx, Queens and Brooklyn, releasing off-shift men from duty, as Brooklyn Companies returned to their stations from Staten Island.

At 7:42, a special call was sounded for Searchlight 2 and four minutes later, for Searchlight 1.

At 8:16, Rescue 1 was special called to the Richmond fire.

At 9:26. Special call for the fireboat "Willett" (E. 78).

At 9:54, signal 222-3-71, indicating the 39th street ferry was out of service (the fire at this time endangering the ferry house).

At 11:38, a special detail of seven of-

(*Continued on page 634*)

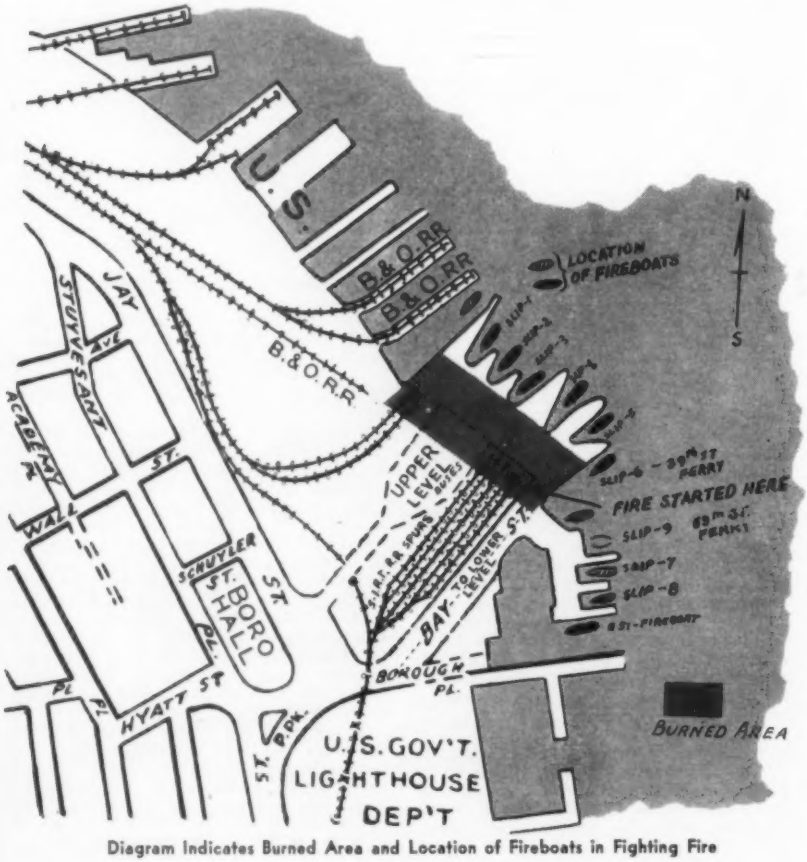


Diagram Indicates Burned Area and Location of Fireboats in Fighting Fire

Seventy-Third Annual I. A. F. C. Conference a Big Success

FIRE ENGINEERING STAFF CORRESPONDENT

THE Seventy-Third Annual Conference of the International Association of Fire Chiefs—and its first post-World War II convention—held in Cleveland, July 23-26, was one of the largest and most successful in the history of the Association. There were over 1,000 in attendance, with actual registration totaling 966, including fire officers, municipal officials, apparatus and equipment representatives and guests.

Conference headquarters was the Statler Hotel, with the business sessions and displays of fire fighting equipment and apparatus in the beautiful Cleveland Municipal Auditorium. The entire four-day business and entertainment programs were well attended.

Cleveland Fire Dept. Photo

Prominent Figures at Cleveland I. A. F. C. Conference

Left to right: President Samuel J. Pope opening the Conference; Chief James Granger, Cleveland Fire Department, host, joins with Mayor Thomas A. Burke in welcoming the members and friends of the Association.

President Samuel J. Pope of Boston, opened the conference in the Auditorium Theatre, Tuesday morning. Reverend Father Kenneth Mulholland, Catholic Chaplain, Cleveland Fire Department, delivered the Invocation, following which came the "Posting of the Colors" and the singing of the National Anthem, and "God Save the King."

Despite a leg injury, Chief James Granger, host and chief and head of the Cleveland Fire Department, was present throughout the conference. He introduced the Mayor of Cleveland, Hon. Thomas A. Burke, and Director of Public Safety, Frank D. Celebreeze, whose official welcomes to Cleveland were responded to by Chief Frank Bender of Saginaw, Mich.

In his report on progress, President Pope showed that the Association had added over 2,000 new members to its rolls, thanks in great measure to the membership drive of the Manufacturers Advisory Committee. He briefly detailed the major activities of the Association during the past year and closed by urging members to take advantage of the training given fire fighters in the Armed Forces and make best use of these men. "We must be ready to accept the 8-hour day in the fire service," he said.

The appropriate and beautiful memorial service, which followed, were conducted by the Cleveland Fire Department, aided by members of the Association. Prayers were given by Reverend Walter K. Klein, Pastor of West Side Evangelical Church and Protestant Chaplain of the Department. A solo was impressively sung by Louis G. Hehman. The services were concluded with an address by Rabbi Rudolph M. Rosenthal, Pastor of Temple-on-the-Heights, Jewish Chaplain of the Fire Department.

Technical Sessions Well Attended

The technical sessions opened on Tuesday afternoon, after a progress report by Chief Daniel B. Tierney, Secretary-Treasurer of the Association, with an interesting paper on the Hotel LaSalle fire in Chicago, by Frank McAuliffe, vice-president of the Association and Chief of the Chicago Salvage Patrol.

Chief McAuliffe gave a "fireman's talk to firemen," describing the construction of the hotel, the hazards, the inspections by the fire department, the violations, the undetermined cause; and stressed the rapid extension of the fire. He outlined the operations of the department from the time Engine 40 and Ladder 6 responded on a telephone alarm, until all victims had been removed. In his talk, Chief McAuliffe used large-scale diagrams to illustrate the spread of the fire, the rescue efforts and to explain construction details.

Mr. A. C. Hutson, Assistant Chief Engineer, The National Board of Fire Underwriters, presented a paper on "What's Back of the Increasing Fire Losses."*

"What Benefits Does the Small City Get from Sending its Volunteer Chief to the I. A. F. C. Conference" was the subject of an interesting paper by the Hon. B. A. Rasmussen, Mayor of Midville, Utah. "Paid and volunteer fire chiefs have many problems in common," he said, "the solution of which may be found at such conferences."

The Wednesday morning technical session opened with a paper by Dr. R. C. Steinmetz of the Mill Mutual Fire Prevention Bureau, Chicago, Ill., on "Where Are We Headed in Arson Control." The picture of arson fires and arson convictions (or rather lack of convictions) painted by Dr. Steinmetz was not a pleasant one and evidenced the need of more thorough investigation and study by both fire and police services.

The balance of the morning session was devoted to a series of demonstrations, many of them dramatic, by G. M. Kintz and his assistant, H. F.

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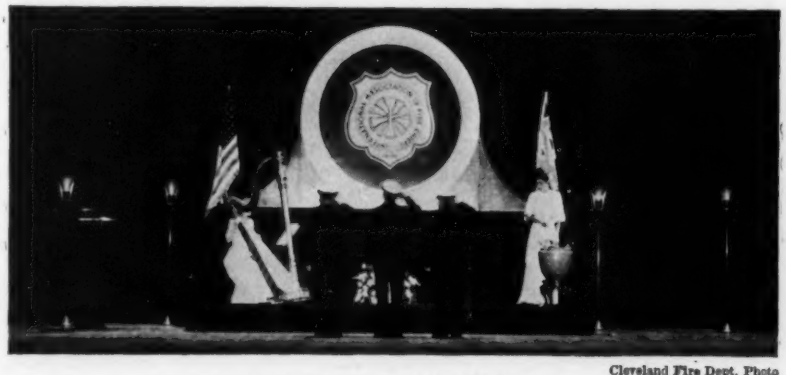

Cleveland Fire Dept. Photo

Impressive Convention Memorial Services

An outstanding feature of the Conference was the beautiful memorial service conducted by the Cleveland Fire Department in honor of deceased members.

Cleveland Fire Dept. Photo

"Crippled" Conferees

Host Chief James Granger, Cleveland, recovering from a leg injury, consoles I. A. F. C. Executive Secretary Jay Stevens, San Francisco, on crutches due to a foot infection.

Browne of the U. S. Bureau of Mines. His topic was "The Characteristics of Fire," and Dr. Kintz punctuated his lecture with stories and anecdotes to drive home many pertinent observations. "Gasoline is made to explode or burn, not to be used as a cleaning fluid," he said, and: "It is unsafe to use ordinary flashlights around combustible gases or vapors."

The afternoon technical session opened with E. J. League, Inspector, Bureau of Explosives, Association of American Railroads, speaking on the subject "Hazardous Material We May Encounter in Railroad Fires."

Mr. League discussed the operations of the railroads during the war in transporting war materials and munitions and pointed out that although the war is over, the transportation of combustibles continues and both the railroads and communities they serve still face serious fire problems.

Dr. Foster D. Snell, Consulting Chemist, the Snell Laboratories, New York, covered the subject "Hazards of Plastics" and endeavored to set at rest the fears held by some fire officers that modern plastics are highly hazardous. According to Dr. Snell, fire chiefs and others have little to fear on this score and only a very few of the 3,000 and more different plastic products present any serious fire and explosion hazards.

A high spot in the conference technical topics was the address by former Captain Harold J. Burke (USNR, Ret.) now Deputy Chief in Charge, New York Fire Department, entitled "Looking Ahead."

Chief Burke Pictures Tomorrow's Fire Service

Chief Burke had two main themes: one, the proper utilization of the training and other fire control techniques developed by the Navy during the war and, secondly, the changes and improvements in present-day fire fighting operations that may ensue.

Present fire extinguishing methods "are static in a dynamic age," he said, stressing the need for full scale "experience training" of rookies as against the old style drill school evolutions. Chief Burke advocated that Congress create an administrative agency to coordinate and develop the nation's fire fighting services. "Why shouldn't there be Federal conservation with Federal subsidy in reducing the appalling national fire waste, similar to the Federal conservation of crops, soil erosion, and so on," he asked.

Chief Burke raised questions, and answered them, concerning water fog, foam and fog-foam; elimination of water towers and special rescue squads, and he urged that the Association prepare and distribute a suitable manual for the guidance of fire department users of two-way radio.

Following Chief Burke's paper, Mr. George Richardson, Secretary-Treasurer, International Association of Fire Fighters, introduced his organization's new president, former Chief John Redmond of the Chicago Fire Department who is well known to many of the delegates. Mr. Richardson spoke on "What's Ahead in Salaries and Working Conditions for the Fire Service."

Members then adjourned to witness a series of field demonstrations on the lake front, conducted by the Cleveland Fire Department, assisted by certain manufacturer-exhibitors. Different oil fires were extinguished by fog and foam, utilizing different type nozzles. In one demonstration a tank containing several thousand gallons of fuel oil, primed by gasoline, was quickly extinguished by sub-surface, or intrusion, application of foam. These tests were directed by Battalion Chief Emmet Byrne and aides of the Cleveland Fire Department.

Photo by Hugh Walker

The "Voice" of the Demonstration

Chief Emmet Byrne, Cleveland Fire Department, directs activities at the lake front demonstration.

Thursday morning's business meeting opened with the showing of special colored sound films of the Findlay, Ohio, oil fire extinguishment tests, after which James Dugan, Carbide and Carbon Corporation, South Charleston, W. Va., described the tests and submitted his conclusions concerning their adequacy and effectiveness. He believes the experiments demonstrated that, properly applied, water fog and foam, both mechanical and chemical, will entinguish hot fires in oil storages, but he felt they were not finally conclusive.

Chief McAlpine Attests Value of Master Streams

Pictures were shown, also, of the Navy's Edentown tests, following which Chief G. R. McAlpine of Oklahoma City, Okla., spoke on the needs of better fire protection in the nation's airports. Fire departments are not being sufficiently considered in the post-war aviation program, he said. He detailed the hazards in hangar fires and concluded his excellent address with a description of the Tinker Field hangar fire which, he said, demonstrated the need of effective use of master streams for large scale fires of this type.

Time was then permitted exhibitors to

Cleveland Fire Dept. Photo

Banquet Overflows Statler Grand Ballroom

Partial view of Thursday's banquet which overflowed the Statler's spacious grand ballroom. Speaker's table is at top of picture.

briefly tell the "who, what, why, when and where" of their products.

Thursday afternoon's session opened with Dr. W. A. Ross, U. S. Department of Education, Washington, D. C., speaking on "What's New in Firemanic Training." He was followed by Fire Commissioner Michael Corrigan of Chicago, who supplemented Chief McAuliffe's description the Hotel LaSalle fire with his personal observations and expressed the hope that the Association could induce hotels to promptly call the fire department for all their fires and not try to handle them "personally."

Reports on Ship Fire Tests

The description of the "Fire Extinguishing Tests on a Cargo-Laden Ship" was led by Chief Albert J. Sullivan of San Francisco, and Commander Lloyd Layman, USCG, the latter being in charge of the experiments. Chief Sullivan is one of the two members of the I. A. F. C. appointed by President Pope to observe and record the tests. The other member appointed by President Pope was Jay W. Stevens who cooperated with Chief Sullivan in preparing the report. Although as yet uncompleted, the tests have already disclosed a number of interesting facts on fire extinguishment by the removal of oxygen and the use of carbon dioxide, and further reports from Commander Layman and the Association eye-witnesses are being eagerly awaited.

In a brief round table discussion on the subject "What Trends in Fire Service Communications" conducted by Chief Roi B. Wooley of FIRE ENGINEERING, assisted by Herbert A. Friede, Superintendent of Fire Alarm, Washington, D. C., the latest developments in short-wave F.M. radio as well as in voice amplification, facsimile, use of the teletype and message-recording were discussed, with a number of chiefs participating.

W. E. Hoffman, War Assets Administration, spoke on "Protecting Surplus War Materials."

Another round table discussion under the heading "What Can We Do About On-the-Job Training in Fire Departments under Veterans' Administration Guidance" brought to light several interesting facts. The subject was handled

(*Continued on page 652*)

Active Members Present at the I. A. F. C. Convention

(All the following are active fire chiefs, unless otherwise listed.)

Alaska
Richard B. Smith, Anchorage

Alabama
H. C. Chamberlain, Sheffield
J. M. Cobb, Redstone Arsenal, Huntsville
B. O. Hargrove, Huntsville
L. B. Hill, Bessemer
R. L. Lampley, Montgomery
L. L. Petrey, Mobile
Walter W. Stephen, Monsanto Chemical Company, Anniston

Arkansas
John Beveliaque, Helena
M. J. Brun, Fort Smith
J. Carmichael, Little Rock

California
John H. Alderson, Los Angeles
C. N. Carrell, Santa Monica
Thomas F. Cuff, Menlo Park
Edward Lamb, Ex-Chief, Stanford Univ., San Francisco
Lloyd Layman, Commander, USCGR, on leave from Parkersburg, W. Va., F. D., San Francisco
Terrence Mulligan, Sacramento
J. W. Stevens, Exec. Secty., I.A.F.C., San Francisco
A. J. Sullivan, San Francisco

Colorado
A. A. Feldman, Denver
J. J. Fitzpatrick, Pueblo

Connecticut
T. H. Donnelly, West Hartford
Paul P. Heinz, New Haven
Henry G. Thomas, Hartford

District of Columbia
W. E. Hoffman, Chief, Fire Protection Div., War Assets Adm., Washington
Clement Murphy, Washington

Florida
M. G. Bennett, Orlando
E. F. Beville, Gainesville
H. R. Chase, Miami
Steve Edwards, Quincy
Ralph R. Hardin, Palm Beach
G. E. Hare, Jacksonville
R. N. Hershey, Lake Worth
J. R. Larrabee, West Palm Beach

Georgia
Walter S. Blanton, Savannah
D. W. Brosnan, Albany
B. L. Cliatt, Augusta
W. T. McKinney, Rome
R. O. Noble, Cordele
Howard Schaffer, Marietta
S. E. Simonton, Griffen
W. C. Thompson, Athens
H. B. Wells, Camp Gordon, Augusta

Illinois
Thomas D. Blake, Rockford
Earl E. Cratty, Galesburg
John H. Craig, State Fire Marshal, Springfield
Charles J. Foucek, Naperville
Fred Hoffman, Harvey
Walter B. Hutton, Waukegan
Thomas J. Kelly, Springfield
Ira D. Leech, Decatur
Albert Luedeke, Freeport
Frank C. McAuliffe, Chicago Patrols, Chicago
F. B. McDowell, Jr., Brookfield
Charles Muirhead, Danville
John O. Nygran, Joliet
R. J. O'Brien, Hazel Crest
E. J. Ryan, Aurora
Ed. Schneider, Libertyville
Sidney L. Ulrich, Peoria

Indiana
Charles J. DeVleeschower, South Bend
John F. Eckert, Madison
Fred W. Goeglein, Fort Wayne
John A. McCracken, Gary
Richard L. Minser, Elkart
Clem Smith, Ex-State Fire Marshal, Indianapolis
Joseph Willardo, East Chicago

Iowa
Wright Hedges, Atlantic
E. G. Kolb, Boone
E. Kohout, Cedar Rapids
Charles B. Kuhl, Sioux City
Sam Long, Ames
Waldo Merrill, Council Bluffs
Harold W. Nelson, Clinton
Charles L. Slade, Des Moines
Ray Tiller, Waterloo

Kansas
C. W. Brown, Wichita
William J. Cawker, Topeka
W. H. Hazell, Hutchinson
Paul Ingels, Lawrence
Olander Lind, Kansas City

Kentucky
John H. Krusenklaus, Louisville
Frank A. Northcutt, Covington

Louisiana
Robert A. Bogan, Baton Rouge
Herbert Broyler, Kentwood
Howard L. Dey, New Orleans
S. J. Flores, Shreveport
A. A. Hanson, Westwego
J. A. Hebert, Sr., Plaquemine
J. C. McEachern, Haynesville
E. S. Smith, Bogalusa
A. E. Stuart, Ferriday

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A. J. Bargagini, Bethesda
Jesse A. Fisher, Annapolis
Joseph A. Giammatteo, Glen Echo
R. C. Hoenicka, Cumberland
George R. Lindsay, Hagerstown
Irving W. Johnson, Takoma Park
James N. Ripley, Baltimore
David S. Tuohey, Cabin John

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Napeen Boutilier, Boston
William M. Carroll, Worcester
Benjamin L. Chase, Haverhill
Herman E. Gutheim, Cambridge
John L. Keating, Newton Center
Albert W. Kimball, Hingham
W. C. McElroy, Watertown
John C. McNally, Somerville
Charles Normandin, American Optical Co., Southbridge
Samuel J. Pope, Ex-Chief, Boston
H. C. Root, Springfield
Richard M. Salamone, Needham
Thomas H. Slaman, Wellesley
Daniel B. Tierney, Arlington

Michigan
Gustav Anselm, Wyandotte
Russell Armstead, Ubly
E. J. Bandgren, Muskegon
Joseph C. Benoit, River Rouge
Frank W. Bender, Jr., Saginaw
Arthur T. Brown, Ishpeming
R. W. Bystrom, Marquette
C. M. Carlson, Norway
Ledger Chauvin, Grosse Pointe
Harold E. Crawford, Jackson
C. A. Crosier, Battle Creek
George F. Dansbury, Grosse Pointe Farms
Don M. Dickerson, Eloise
John R. Doster, Battle Creek Township F.D., Battle Creek
Fred Duemling, Grosse Pointe Shores
Frank S. Durbin, Hazel Park
Russell A. Emerson, Monroe
Hugh F. Fisher, Lansing
Frank A. Ford, Highland Park
Henry Goudy, Wayne
John M. Griffin, Hamtramck
Ray T. Hall, Benton Harbor
Orie A. Hand, Lincoln Park
Stanley Herdzik, Dearborn
Ninnian C. Higby, Detroit
A. W. Hennion, Detroit
R. M. Hitchings, Flint
Henry Hoebeke, Grand Haven
Gordon C. Hohmer, Benton Harbor
A. M. Jaeger, Ecorse
John A. Keefe, Ex-Chief, Detroit
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George S. Lockhart, Minneapolis
William J. Sudeith, St. Paul
Louis Turk, Chisholm

Mississippi
Sam Bellipanni, McComb
R. G. Duren, Greenwood
J. F. Hosemann, Vicksburg
L. F. McDonald, Jackson
P. M. Pigford, Meridian

Missouri
W. H. Gardner Salvage Patrols, Kansas City
John B. Jones, Joplin
J. T. Lynch, Kansas City
Leo J. Urbanski, St. Joseph

Montana
A. J. Baker, Lewistown

Nebraska
Ben G. Meister, Omaha

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George Cogan, Portsmouth

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J. O. Baumgardner, Fairview
Martin D. Benedict, Shiloh
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Ray Starner, Grandview Heights
A. G. Stiwald, Amhurst
Elmer Stough, Lorain
Elmer C. Taylor, Warrensville Heights
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T. R. Shenk, Neffsville
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Edward E. Wischer, Milwaukee

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W. J. Scott, Fire Marshal, Province of Ontario, Toronto
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Connecticut
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Father John Coleman, Fox Lake
M. J. Corrigan, Fire Commissioner, Chicago
J. A. Flynn, Potter Mfg. Co., Chicago
James Gleason, Chicago
E. F. Hinkamp, Chicago
G. R. Hurd, Supt. Fire Prot., New York Central System, Chicago
G. A. Jackson, Chicago
R. M. Lawless, Bi-Lateral Fire Hose Co., Chicago

L. A. Lehr, the Seagrave Corp., Chicago
W. B. Moore, Chicago
R. W. Neville, Cardox Corp., Chicago
J. Raleigh, Fire Commissioner, Cicero
E. M. Rhoades, Eureka, Fire Hose Div., U. S. Rubber Co., Chicago
J. R. Rustic, Amer. Dist. Telegraph Co., Chicago
W. W. Scott, Federal Electric Co., Chicago
F. F. Stover, The Gamewell Co., Chicago
D. L. Walsh, Chicago
E. C. Watson, American-LaFrance-Foamite Corp., Chicago

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W. H. Glazebrook, Fabric Fire Hose Co., Indianapolis
E. L. Orr, Indiana Firemen's Assn., Terre Haute
R. G. Shiffler, Elkhart Brass Mfg. Co., Elkhart
R. V. Volkert, Elkhart

Iowa
J. G. Follett, Herman Brown Co., Des Moines
H. C. Reinholdt, Iowa Firemen's Assn., Manning

Louisiana
Dr. B. J. Barrodale, Louisiana State Firemen's Assn., Houma

Massachusetts
R. A. Bird, Rockwood Sprinkler Co., Worcester
C. L. Gravelle, Boston
Gordon Litchfield, American-La France-Foamite Corp., Boston
E. J. McCarthy, The Gamewell Co., Newton
E. J. O'Neill, Peter Pirsch & Sons Co., Boston
G. H. Pettengill, Milton
F. B. Philbrick, The Gamewell Co., Newton
J. J. Ryan, Rockwood Sprinkler Co., Worcester
C. D. Sennott, Ward LaFrance Truck Corp., Boston
N. D. Sherwood, Rockwood Sprinkler Co., Worcester
W. H. Stephenson, J. H. Emerson Co., Cambridge
C. A. Yoho, Taunton

Maine
W. H. Rocheleau, Asst. Chief, Westbrook

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B. D. Barton, American Fire Appar. Co., Battle Creek
H. A. Bentley, Battle Creek
F. H. Burns, Grand Rapids
W. B. Burr, Detroit
R. A. Carle, Detroit
J. W. Erickson, Batt. Chief, Detroit
A. J. Gilleo, Eureka Fire Hose Div., U. S. Rubber Co., Detroit
W. A. Lindberg, Grosse Pointe
M. Meigs, Detroit
C. T. McGraw, Circul Air Corp., Detroit
H. R. Moler, Detroit
G. E. Oles, Detroit
M. Paye, Detroit
L. B. Palmer, Mackinaw
R. G. Pulver, John Bean Mfg. Co., Lansing
W. A. Reidel, Amer. District Telegraph Co., Detroit
A. B. Siegfried, General Fire Truck Co., Detroit
Glenn Sheren, Lansing
F. L. Willett, Detroit

Minnesota
P. W. Copeland, Minneapolis
H. F. Lundberg, Deputy State Fire Marshal, Minneapolis
F. V. Moulton, Minneapolis

Missouri
E. S. Doan, St. Louis Sponge Co., St. Louis
W. A. McDonnell, F. D. Photographer, St. Louis
Glenn T. Scott, American-LaFrance-Foamite Corp., Kansas City

New Jersey
F. J. Apgar, Trenton
E. N. Day, New Jersey Fire Equip. Co., Dunellen
W. Doan, Camden
M. A. Hopper, Ramsay
J. B. Keenan, Fire Commissioner, Newark
M. A. Laswell, C-O-Two Fire Equip. Co., Newark
J. P. Maloney, Pyrene Mfg. Co., Newark
J. Yandura, Fire Commissioner, Trenton

New York
R. W. Auer, Fog Nozzle International, Inc., New York City
E. L. Ballard, Buffalo
F. W. Beardslee, Mack Mfg. Co., New York City
C. Beckwith, Ward LaFrance Fire Truck Corp., Elmira
H. J. Beethoven, New York City
J. O. Binford, American-LaFrance-Foamite Corp., Elmira
T. W. Burton, D. B. Smith Co., Utica
N. Bjorck, Ward LaFrance Truck Corp., Elmira
K. Clapp, Port Chester
J. H. Green, Eureka Fire Hose Div., U. S. Rubber Co., New York City
W. Eckman, Jamestown
J. Hoffmire, Albany
A. Krulee, Mearl Corp., New York City
W. Loney, Hewitt-Robbins, Inc., Buffalo
T. McCarthy, Rochester
M. MacLeod, New York City
T. A. Miller, Buffalo
H. S. Morgan, Johnson City
Arthur Myers, Atlas Safety Equip. Co., New York City
R. B. Ness, New York City
H. C. Smith, Buffalo
John J. Waldron, Deputy Chief, New York City
Hubert Walker, American-LaFrance-Foamite Corp., Elmira

North Carolina
A. L. Brinson, North Carolina Firemen's Assn., New Bern
H. P. Jarvis, Asheville
O. C. Wipper, Bi-Lateral Fire Hose Co.

Ohio
D. Anderson, Barberton
W. T. Banning, New Philadelphia
Harold J. Behrens, Cleveland
W. L. Birch, Columbus
H. F. Combs, Springfield
J. Crouch, Columbus
G. T. Edgar, Cleveland
T. Flynn, Cincinnati
C. Goodman, Toledo
W. Gress, Dayton
E. Hesse, Cleveland
R. Hooker, Capt., F. D. Dayton
H. A. House, Steubenville
A. Jones, Kerotest Co., Toledo
J. Love, Universal Mfg. Co., Orrville
V. MacCarthy, R. D. Wood Co., Lakewood
T. McManamon, State Ins., Fire Fight., Lakewood
C. Ogborn, Asst. Chief, Columbus
H. Perrine, Toledo
W. Powell, Cleveland
W. Rosche, Canton
J. Schellin, Wooster Brass Mfg. Co., Wooster
W. Schleinitz, Dayton Fire Equip. Co., Dayton
G. Smith, Republic Rubber Co., Youngstown
R. N. Smith, Ahrens-Fox Fire Engine Co., Cincinnati
H. L. Stettler, Jr., Akron Brass Mfg. Co., Wooster
Lester Stevenson, The Seagrave Corp., Columbus
L. K. Warner, Cincinnati

Oklahoma
E. H. Andrews, Tulsa
G. H. Cline, American-LaFrance-Foamite Corp., Oklahoma City
G. N. Paris, Drillmaster, Tulsa

Oregon
G. A. Neep, Neep Equip. Co., Portland

Pennsylvania
L. R. Byler, Belleville
L. W. Campbell, New Castle
J. W. Channell, Philadelphia
Ray Cornwall, Welders' Service Co., Pittsburgh
Art Espey, The Cardox Corp., Philadelphia
S. A. Fink, Pittsburgh
H. A. Jackson, Franklin
F. E. James, Mack Mfg. Co., Allentown
B. Z. Janeway, Philadelphia
H. Lloyd, Philadelphia
H. O. Meier, Philadelphia
R. J. Murray, Erie
P. H. Penman, Philadelphia
D. L. Roberts, Trevose
F. A. Rowe, Ex-Batt. Chief, Philadelphia
R. G. Sargent, Hale Fire Pump Co., Conshohocken
G. L. Seth, Mine Safety Applicanes Corp., Pittsburgh
P. L. Stanton, E. & J. Mfg. Co., Philadelphia
M. E. Sweeney, Pittsburgh
Lee Weckerly, Philadelphia
A. D. Wunder, Allentown

Rhode Island
K. P. Jones, Grinnell Co., Providence
H. McElroy, Dept. Chief, Providence

Tennessee
W. L. Martin, Chattanooga

Texas
A. B. Busbey, American-LaFrance-Foamite Corp., Dallas
Richard G. Joyner, Jr., Eureka Fire Hose Div., U. S. Rubber Co., Dallas
Richard W. Joyner, Sr., Dallas

Utah
J. Coombs, Salt Lake City
B. A. Rasmussen, Mayor, Midvale

Virginia
F. H. Blackwell, Roanoke
Mrs. D. L. Brigham, Oren Fire Appar. Co., Roanoke
F. S. Brigham, Oren Fire Appar. Co., Roanoke
C. Carr, Roanoke
Mrs. K. L. Carr, Oren Fire Appar. Co., Roanoke
D. Graham, Richmond
W. T. Jewell, Norfolk Navy Yard, Portsmouth
E. J. Knowls, Roanoke

West Va.
C. F. Reininger, Powhatan Brass & Iron Works, Ranson

Wisconsin
C. E. Goodman, Peter Pirsch & Sons Co., Kenosha
C. A. Rogers, Appleton
I. J. Westberg, Ansul Chemical Co., Marinette
C. H. Welch, Clintonville

Canada
A. D. DesRoches, Fire Marshal's Office, Toronto, Ont.
H. B. Weed, Pyrene Mfg. Co., Toronto, Ont.

FIRE DEPARTMENT STATISTICS OF THE HOTEL LASALLE FIRE

Some Interesting Figures Presented In Chicago Fire Department's Consolidated Report

AT the time FIRE ENGINEERING's July account of the fatal Hotel La Salle fire in Chicago, on June 5, 1946, was written, many details of the fire department's operation were lacking.

Inasmuch as the actual working data of the Chicago Fire Department are, to the advanced fire fighter, the most interesting, the editors secured permission of Chief Fire Marshal Anthony Mullaney, of the Chicago Fire Department to bring its readers that statistical story which was not available when the July account was prepared.

The fire was in the Hotel La Salle, owned by Roanoke Realty Co. (LaSalle-Madison Hotel Co.). The building was twenty-two stories in height with two basements. It was constructed of reinforced concrete and occupied an area 160 x 180 ft.

The duration of the fire (fire department operations) was three hours and thirty-two minutes.

The number of persons killed (at the time of the report) was 61 with approximately 60 injured and 150 rescued.

The total number of alarms was seven.

The first notification of the fire department was a still alarm, at 12:35 A.M., on June 5, 1946. This was followed by a box alarm from street fire box 1028. From that time on the alarms and assignments were as follows:

1st Alarm 12:38 A.M.—E 1, 13, 17, 40; L 1, 6; Squad 1; HP 1; WT 1; Dist. Chf. 1; Batt. Chfs. 1, 25 (E 40 responded on the still alarm)

2nd Alarm 12:40 A.M.—E 5, 11, 21, 42, 98; L 2, 9; Squad 2; HP 2; WT 2; Batt. Chf. 2

3rd Alarm 12:45 A.M.—E 3, 6, 14, 34, 104; L 3; Squad 8; Batt. Chf. 6

4th Alarm 12:45 A.M.—E 8, 12, 22, 25, 27

5th Alarm 12:45 A.M.—E 9, 19, 24, 29, 107

SPECIAL CALLS

Special Duty: 1:08 A.M.—317, 324, 341, 517, 5110, 816

1st Special: 1:16 A.M.—28, 105, 106, 114

2nd Special: 1:18 A.M.—35, 36, 39, 77, 112

Special Duty: 1:45 A.M.—521, 516

Special Duty: 2:10 A.M.—513, 514, 519

Commissioner Corrigan was in charge of all operations. In command at the start of the fire: Division Marshal Gibbons. Upon his arrival he ordered the 5-11 struck and put companies to work on the Madison St. side of the hotel. He supervised the working of companies until the arrival of 2nd Deputy Chief Haberkorn, following which he went inside, and proceeded up the stairs, supervising operations of various companies on various floors.

The Chief officers present were 2nd Deputy Chief Haberkorn; 2nd Deputy Chief Dahl; Drillmaster Sheehan; 1st Deputy Chief Cody and Marshal Fenn, head of the Fire Prevention Bureau.

Operations of the four battalion chiefs, who were at the fire are briefed as follows: Chief Freemon, 1st Batt. (who died later in the hospital). Ordered box and 2-11 struck. Put companies to work on east side of building. Went inside on 4th, 5th and 6th floors to evacuate occupants. "Was found overcome by H & L-1."

Chief Walsh, 25th Batt.: Supervised the working of hose streams on La Salle St. side. Also the removal of bodies from various floors.

Chief Powers: Supervised the working of hose streams inside of 1st and 2nd floors. Also checked all floors. Removed bodies from 3rd floor.

Chief Bieze: Supervised the working of hose streams in 2nd flor, Madison St. side; later directed streams on elevator shaft on all floors; directed rehoval of bodies on all floors.

Forty Lines Stretched

From the report it was indicated that 38 hose lines were stretched and charged during the period of operations, while two more were laid in but not charged. Four lines were siamesed. Five pumpers operated two lines; one operated three, and one, (E 40) operated four. Approximately 4100 ft. of 3-in. hose and 15,700 ft. of 2½-in. hose was stretched. Lengths of stretches varied from 100-ft. to 950 ft. Hydrants used were all the "Chicago" type. The distance of pumpers from the fire varied from 50 ft. (E 40 and 13) to 950 ft. (E 114).

The report indicates that first-in companies at once hooked up to standpipes and stretched in to the lobby. Hand lines were taken into the building over the hotel canopies, and up ladders, including the department's longest all-metal types. Other companies operated lines into elevator shafts, some using the building standpipes.

Running throughout the account of company operations is the phrase "Assisted in removal of bodies" and "applied artificial respiration." Many engine company personnel after stretching in, and hitting the fire, applied artificial respiration to victims which they encountered.

A few companies operated streams but a short time, then worked to revive victims. Two engine companies stretched, but did not charge lines.

With the ladder companies, as might be expected, the objectives were to save life—to get the victims and the uninjured guests out of the building.

The structure was laddered on every side except the north, and some ladders were raised to corners. Every type and length of ladder in the department was used.

The accounts relate how companies rescued persons on floors up to and including the seventh, and how firemen assisted guests down the fire escapes, opened up and searched rooms, located casualties and applied artificial respiration, where there was a possible spark of life remaining.

The work of the squads and special service forces, likewise, had largely to do with rescue and rescuscitation. Such terse company reports as these abound:

"Evacuated Floors 4-5-6; Laddered North East Corner building."

"Rescued 6. Removed dead. Laddered West side of building."

"Hand line to 3rd floor. H. & H. on victims."

"Used body bags and stretchers to remove victims."

"Inhalator on 3rd floor."

"E & J—H & H on victims 6th floor."

"E & J—H & H on victims on 7th floor."

"Removed bodies from floors 3 to 11."

"Inhalator on victims floors 5-7-8-21" (Indicating height to which people were overcome).

"Inhalator on victims floors 9-10-11."

One terse but tragic item in the report catches the eye: "Used rescuscitator on Chief Freemon—Removed to hospital."

The records indicate that the great majority of companies performed more than three hours duty at the scene. One engine company (E 40) operated 13½ hours, while a ladder company ("511") put in 28 hours and 40 min. work. A special service unit (searchlight) reported 12 hr. and 20 min. worked.

The total period of operation by the fire department personnel reaches the impressive total of over 270 company hours.

The report attributes the discovery of the fire to an employee and indicates there was a delay in reporting the fire.

The fire communicated throughout part of the hotel by means of stairways and elevator shaft.

Weather data shows that the wind was "mild," the temperature was 60 deg., and it was a clear night.

Reporting on the condition of the building after the fire, the record says: "safe on upper floors. Lobby and stairways from 1st to 3rd full of debris and broken treads and frames."

Under the subject "lessons suggested by the fire," the report emphasizes the fact that "open stairways cause a fire to spread." And it recommends: "enclosure of all stairways in this occupancy of building."

The total number of fire department equipment of all types employed at the fire is given as follows: 33 engines (pumpers); 8 trucks (ladder units); 10 squads; 2 pressure wagons (H. P. trucks); 2 water towers; 2 ambulances and 2 light wagons (searchlights).

Hotels Urged to Inspect

Discussing fire preventive measures in hotels particularly, Fire Commissioner Frank B. Quayle of New York, speaking before the Eastern Association of Fire Chiefs, advocated co-operation between hotel managements and fire departments and prompt transmitting of alarms when fire is discovered. Smoke and panic were the most general causes of loss of life at such fires, he said, and he recommended the organization of hotel staffs for systematic inspection of possible fire hazards and for supervision of guests in case of an alarm for fire.

Following the fatal Hotel LaSalle fire in Chicago, Mayor O'Dwyer instructed Commissioner Quayle and heads of other responsible city agencies to intensify inspections of hotels and multiple dwellings in all boroughs of the city. Commissioner Quayle went on the air to particularly urge closer cooperation between hotel management and the fire department in the interests of greater fire safety.

MUTUAL AID PLAYS BIG PART IN CONTROLLING MEDFORD FIRE

Frame Packing Plants Provide Ready Fuel For Million Dollar Fire. Crowds Hamper Firemen

A TWO-BLOCK sector of the industrial district of Medford, Oregon, was converted into ruins by the worst fire in the city's history, which caused $1,000,000 property loss. Fear was expressed that the southern Oregon region's multi-million-dollar pear-growing industry would suffer even greater loss because the fruit plants that burned—two of them among the largest in the district—could not be replaced before the August fruit harvest.

Fire Marches On! Medford, Ore., Conflagration Endangers City

Aerial view of Medford's $1,000,000 blaze which destroyed vitally needed packing plants, lumber yard, warehouse and other property before being controlled by local and out-of-town firemen.

The fire, which started about 6:00 P.M. from an undetermined cause on the evening of June 25, on the second floor of the $600,000 American Fruitgrowers plant on South Fir street, was fanned in all directions by a strong, shifting wind and, before it was controlled, had wrecked five other plants and structures.

Completely destroyed were the following: American Fruitgrower's plant with all supplies and equipment; plant of the Crystal Springs Packing Company to the north at a loss of $100,000; the warehouse of the Monarch Feed and Seed Company to the south, along with the firm's seed-cleaning equipment, grain and stock and dairy feed, at a loss of about $100,000; the Porter Lumber Company, across the street, entailing a loss to plant and lumber of $40,000; the Medford Mill Works on Tenth and Grape streets, including the plant and quantities of processed lumber, at a loss of $100,000; and a garage and shop facing on Tenth street.

Most of the structures involved were of frame construction and provided ready fuel for the fire. According to Jack A. Hayes, Salem, deputy state fire marshal, buildings which have large open areas, such as fruit-packing plants, are bad fire hazards and should be constructed with fire walls, fire doors and sprinkler systems if conflagrations such as that which threatened all of Medford's business district are to be avoided. The plants involved in the Medford fire had none of these fire protection facilities, nor was there any adequate watchmen's service.

At the time of the start of the fire, there were only two persons in the American plant, a janitor, and an IBM operator who is said to have discovered the fire. There are conflicting stories concerning the first few minutes following the discovery of the fire, and the transmitting of the alarm. It is said that the operator endeavored to extinguish the fire, first seen on the second floor near the front stairway, but he was driven out by the quick spread of the flames.

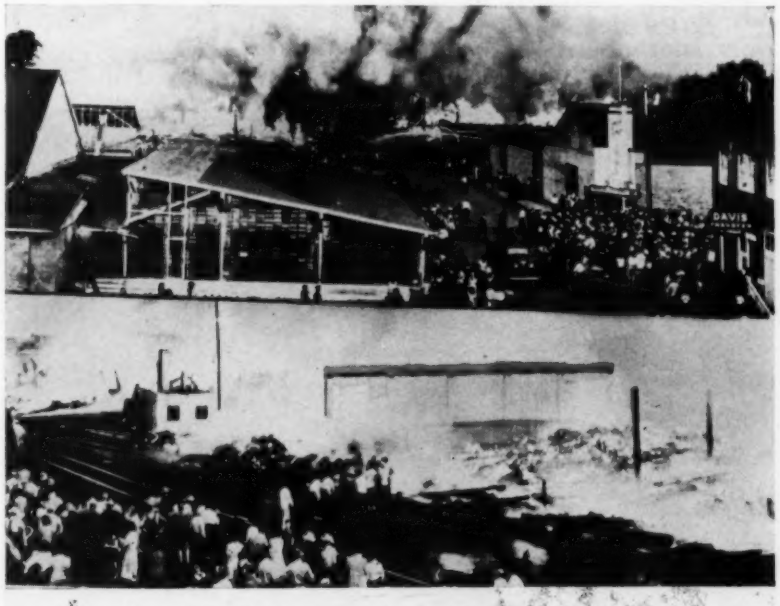
Records at fire headquarters indicate that the first alarm was received at 6:05 P.M. and, according to Fire Chief Roy Elliott, when the department arrived, the building was already heavily involved and blazing fiercely. An employe of a transfer company attested that he telephoned the department at 6:10 by his timepiece and the firemen were on the scene and had hose laid out by 6:13 P.M.

Oil sprays, oily paper and other highly inflammable material in large amounts helped further the fire, according to Chief Elliott, who also stated that the high wind, blowing at the time, made the task of controlling the blaze a difficult one. To add to the trouble, the wind was variable and it was virtually necessary to surround the entire two-block fire area with fire-fighters and equipment to control further extension.

A total of twelve pumpers were utilized to circle the fire ground and protect nearby residences, hotels and business structures, which were constantly in danger from flying embers and radiated heat.

Early in the fire calls for aid were sent to neighboring fire forces. Ashland sent a pumper; two were provided by the Rogue River National Forest service; two by the state fire patrol; two by Camp White; one came from the Medford airport; and one from Timber Products company to aid the three units of Medford's own department.

The firemen were also aided by volunteers, who extinguished dozens of small fires set by burning brands and who as-



Medford Fire Feeds on Frame Structures and Flammable Stocks

Pictures show almost total devastation of two block area with firemen struggling to confine advancing blaze. Crowds of curious spectators complicated firemen's work.

sisted in the removal of furniture and belongings of families in exposed dwellings, and supplies and fixtures in nearby plants and buildings. State guardsmen helped firemen and police in controlling traffic, which was massed on all streets for many blocks.

Reports of the fire were broadcast over the radio, it is said, during the progress of the conflagration. This newscasting together with the huge column of smoke and the movement of apparatus at a busy time of the day helped to swell the crowds of curious.

Deputy fire marshal Hayes stated "the evidence indicates that an inadequate personnel was available for handling of the large crowd which rushed to the Medford fire. This is strictly a policing problem and requires much forethought and planning if disasters are to be prevented."

Four firemen were injured during the conflagration, two being hospitalized. Richard Knight and Freeman Johnson both collapsed from exhaustion or fumes; LeRoy Williams was knocked from the roof of the Monarch warehouse and suffered an injured leg, while Earl Harrison received a hand injury in the mechanism of a pumper.

Chief Elliott and Medford city officials especially praised the out-of-town firemen for their prompt response to calls for help, and their effective operations in controlling the spread of the blaze.

Quick Action Prevents Fire

By Capt. John E. Jordan*

Quick thinking and quick acting on the part of the Columbus, Ohio, Fire Chief, Edward P. Welch, prevented a fire which, had it occurred, might have reached serious proportions.

On the morning of July 1, Chief Welch received a request to pump water from the elevator pits in a warehouse basement that had been flooded to a depth of about two feet, three days previously.

Knowing that the basement contained about six carloads of hemp, and being aware of the possibility of spontaneous ignition in the damp hemp, Chief Welch, accompanied by Capt. John Jordan, of the Fire Prevention Bureau, went to the warehouse to check on the actual conditions.

Inspector S. T. Sides, of the Columbus Fire Prevention Bureau Was Detailed to Keep Constant Check on the Temperature in the Baled Hemp.

Upon entering the basement they noted an abnormal temperature. It was evident that the hemp was "heating up." Further investigation revealed that some of the bales had reached a temperature of approximately 180 degrees . A hook and ladder company was ordered to ventilate the building, and two pump companies were ordered to lay four hose lines into the basement.

Orders were issued for the immediate removal of all hemp stored in the building, but this was delayed several hours, due to the fact that the high water in the basement had shorted out the elevator motors. A temporary lift was installed and the work of removing the 450-pound bales was begun.

Soon after the basement was ventilated, there was a noticeable reduction in the general basement heat. Temperature in the bales dropped to approximately 140 degrees after twelve hours, and to approximately 120 degrees after 24 hours.

After the temperature of the bales had been reduced to 140 deg., the hook and ladder company and one pump company returned to quarters.

The other pump company remained at the scene until the temperature had been lowered to 120 degrees, when it returned to quarters. All hose lines were left in position inside of the building until all of the hemp had been removed.

An important factor in the case is that many authorities on hemp storage disclaim the possibility of spontaneous ignition in such storage, but the facts here definitely prove that there is a fire danger in wet hemp.

Local insurance companies and the owners of the surrounding property praised Chief Welch for his quick action in averting a serious fire in the warehouse district.

*Chief, Bureau of Fire Prevention, Columbus, Ohio.

General View of Hemp Storage and Hose Lines

Fire Resistive Materials Urged For Apartments

In support of safer building regulations, Richard S. Childs, chairman of the Citizens Union, New York City, contends that fire-resistive apartments can be as economical as similar apartments now made of non-fire-resistive materials.

The Citizens Union has supported all efforts in that city to require fire-resistive construction for all new multiple dwellings in the city over three stories in height, instead of over six stories, as at present.

Steel companies and architects at a luncheon recently, presided over by Mr. Childs, presented a fifty-nine-page report to refute the argument that fire-resistive construction would cost 30 to 40 per cent more than masonry and wood-joint construction. The report indicated that although building costs would average about 5 per cent more, this would be offset by rental incomes which would be increased, or an average, by about 7 per cent. This would be derived from a gain in the number of rentable rooms made possible by designs which are only permissible in fire-resistive structures.

H. I. Feldman, one of the architects who compiled the report, said that the advantages in planning a fire-resistive building were the elimination of fire escapes and the wide latitude permitted in placing halls, stairways and bathrooms.

Washington Firemen Win Pay Raise

President Truman recently signed a bill giving District of Columbia firemen a 14 per cent pay increase. This bill was enacted by Congress without opposition and the raise was effective July 1.

The entrance salary for a private in the fire department is $2,720.95 per annum, with yearly automatic promotions to grade 6 at $3,398.11.

Officers salaries are: Sergeant, $3,872.12; Lieutenant, $4,278.42; Captain, $5,023.29; Batt. Chief, $6,242.18; Dep Chief, $6,894.72; Chief Engineer, $10,000.00.

The pilot and marine engineers of fireboat: $4,752.43; Supt. of Machinery: $6,894.72; Fire Inspectors, $3,479.37, and Fire Marshal, $6,894.72.

I. W. Johnson.

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

Another Sliding Pole Casualty

Fireman James R. Gissis, 32, attached to Engine Co. 90, New York Fire Department, was killed when he apparently slipped while jumping for the sliding pole in the dormitory of his firehouse, and fell through the pole-hole, landing on his head twenty feet below.

The company was responding to an alarm of fire in a vegetable store in the Bronx. Gissis was not missed until his fellow firemen returned to quarters, where they found him lying on the cement floor. He was rushed to Fordham hospital but died without regaining consciousness.

* * *

Like the Man Who Built a Boat

The city council of Des Moines, Ia., knows how the man felt who built a boat in his basement and couldn't get it out. They had to authorize construction of larger doors for fire station No. 15 to admit a new pumper, delivery of which was expected in July.

* * *

Conn. State Police Issue New Fire Rules

New regulations for the storage and transportation of inflammable mixtures by service stations were issued in June by the State Police of Connecticut, Chief Stewart Potter of Greenwich, Conn., revealed.

Section 127-3-50 of the new regulations, it is interesting to note, states in part: "There shall be a CO-2 fire extinguisher in each service station, and there shall be one such extinguisher for the grease bay, washstand or repair shop. . . . Should there be three bays or more, there shall be one extinguisher for each two bays. Such fire extinguishers shall be hung on the wall near the entrance door of service stations, grease bays, wash stands and repair shops."

Chief Potter states that ample time in which to comply with the regulations would be given local service men, and recommends that the fire extinguishers should be "not less than of 15 pound capacity."

* * *

A "Swill" Time Was Had by All!

In Buffalo, Joe Pelletier, finding his garbage truck afire, hustled his chariot twelve blocks to the nearest firehouse, where the Brothers extinguished the blaze with chemicals.

Pelletier told the firemen that he took his fire to the firehouse "so it wouldn't be any trouble to the firemen or cost the citizens any extra money."

One of the perspiring lads, after finishing his stint at overhauling, said that was all very swill, but would he just as soon take the next load around to the rear, or at least to leeward!

* * *

Firemen Lead a Cat's Life

From Little Ferry, N. J. comes this "cat-o'-nine-tale" (thanks to J. K.) It has to do with the Borough Hall mousecatcher in the Bergen County town, and the local vamps who insist that the "pussy-footing" in their burg is getting 'em down.

A short time ago, the mousecatcher curled up in the fire alarm mechanism and temporarily snafued the works. Then, on a June night, the tiger-striped mouser that hangs around T. J. Sohol Hall, in Garden street, nonchalantly strolled across the stage while the graduation exercises were being held for some sixty pupils of the town's two grade schools. Firemen stationed in the hall for the occasion flagged the feline down and the show went on.

The following night or so the same pussy got stuck in a tree in Sabine street and—you got it right, pal—the firemen hadda go get him, her or it down.

That's all so fur!

* * *

Demilitarizing Souvenirs

Steps toward prevention of crimes and serious accidents involving lethal weapons held as souvenirs of war are being taken in many cities as a result of the increasing casualties arising out of misuse of wartime "souvenirs."

In New York City, Police Commissioner Arthur W. Wallander has held meetings with the heads of veterans' organizations of the Boroughs to enlist their cooperation. Mayor William O'Dwyer has supported the Commissioner, saying that there are large numbers of souvenirs throughout the city, ranging from pistols to bazookas and between January and June, 1946, ninety-one serious accidents have been caused by war weapons in New York alone. "War souvenirs" are reported to have started a number of fires.

In Newark, N. J., parents of local boys turned over to police four hand grenades, three Japanese flare bombs, and an unarmed fuse from a 75-mm shell in response to an appeal by Police Chief Sebold, after a grenade explosion had injured four thirteen-year-old boys. The Army reported that fifty-one grenades were stolen from an ammunition shack in Wequahic Park, that city. Most of them were recovered.

Fire chiefs in many cities are assisting the police departments and service agencies in an effort to reduce the accident hazard attendant upon careless collecting and handling of destructive war souvenirs.

* * *

Rye Road Roller Burns—Really!

This 'un comes near to being a Ripley. It's from Rye, N. Y., where commuters, waiting for the 8:30 A.M. to New York City, who saw the action, verify it.

It has to do with the "burning" of one of those lumbering, all-metal, gasoline road-rollers. This 10-ton "chariot" was bumping down Cedar street with John Epps in the driver's seat when smoke and flames shot out of the engine compartment. John did a flying leap, after jamming on the brake, while surprised commuters rushed an extinguisher from the depot, but it was of little avail against the rapidly rising flames.

Somebody yanked a box and the Rye vamps, using chemicals, had the fire under control in ten minutes. The cause—undetermined. The damage? Ditto—but the iron chariot will be laid up for awhile—and new 'innards'.

Hot Off the Tape

The new auxiliary fire truck of the New Milford, N. J., Fire Co. No. 1 was damaged badly in a collision with a pleasure car, four firemen suffering injuries. Truck and firemen were not on a fire call. . . . Lancaster, Pa., firemen, members of Local No. 319, IAFF, have endorsed the plea of city's Fire Chief Harry Miller for more men and better equipment. . . . Des Moines, Ia., held first post-war civil services exam's for promotion of firemen to ranks of lieutenants and captains, on July 8. . . . Waterloo, Ia.: fifteen members of Local 66 IAFF, have asked for a flat 20 per cent increase in pay for members of the fire department, plus a 72 hour week. . . . The "north-end" fire station in Newark, N. J., long unused by the fire department but which, as a "boys' center", is used by 500 boys will go on the block for sale, despite police chief's plea that city keep the "teen-age canteen". . . . In Holbrook, Ariz., Eddie Koury, 26, an Army veteran, joined the volunteer fire department, at a banquet given July 2. An hour later he was killed while fighting his first fire. At a blaze in a cleaning shop, he fell from a ladder and broke his neck. . . . Fire Truck Driver George W. Squires of Peekskill, N. Y., sorta liked the old fire truck the City decided to turn in after getting a modern metal aerial ladder job. So he bought the 3-year-old "relic". Deponent sayeth not what he intends to do with it. . . . Barber Ralph H. Crabb, in Bozeman, Mont., was shaving a customer, when flames began crackling and smoke started pouring out of a restaurant next door. Crabb went right on shaving. His unruffled faith in the local Brothers was justified. They quickly snuffed out a hot kitchen fire with chemicals, and Crabb's customer departed, unnicked, and in one piece. . . . In Newfoundland, forest fires raging from timber lands toward the coast leveled one village, swept toward other small hamlets, forcing some 4,000 persons to flee from their homes. Over forty-five buildings were destroyed and others damaged in Angle Brook, a vilage of a few hundred residents. . . . In Princeton, N. J., the interior of the home of R. C. Maxwell, prominent advertising executive was destroyed with loss of $75,000. . . . Fire partially destroyed the town of Aaimanera, Cuba, July 1, sweeping through more than sixty buildings, including the railway station, theatre and market. Firemen and equipment from nearby American Naval Base at Guantanamo helped fight the blaze. . . . The worst forest fire in northern California in five years swept through 3,000 acres of fir, pine and brush in Klamath national forest, southwest of Yreka, Cal. A 20-mile wind helped fire, hampered efforts of 350 forest firefighters and volunteers, including San Quentin convicts. Twenty small fires started in the forest from electrical storms in one day. . . . A fire which swept a four-story apartment building in Chicago was caused by the lessee of the building who slipped and fell from a ladder while varnishing a transom frame on the first floor. When he fell, an extension cord and bulb he was using for light, ignited a quart can of varnish. Eight persons were injured. . . . The radio "hams" of Connecticut—members of the American Radio Relay League—carried on their first post-war nationwide test of amateur portable and mobile emergency equipment for disaster operations.

For Practical Discussion of Current Fire Department and Fire Management Problems

USE OF 1½-INCH HOSE

THE discussion in this Round Table is a continuation of that which appeared in the July issue of FIRE ENGINEERING on the use of 1½-inch hose.

The general response from our readers makes it necessary to carry the discussion over to this issue.

Readers are invited to send in their comments on this subject, or on next month's subject which is described in a box on a following page. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Topic

C. N. Carrell, Chief, Santa Monica, Cal.: We carry twin 1½-inch hose lines 100 feet long equipped with spray and one straight stream nozzle on all engine companies. This is loaded in a separate compartment in the hose bed.

It is used wyed from 2½-inch lines on practically all residential fires and inside fires where booster lines are deemed insufficient to handle the fire and where heavy streams are unnecessary.

A 2½-inch line is laid to the fire, broken in the street and the 1½-inch assembly attached.

The use of 1½-inch hose facilitates getting lines in action early. It is easy for one man to handle in close places and reduces water damage to an absolute minimum, particularly when spray nozzles are used.

I. D. Merrick, Chief, Poughkeepsie, N. Y.: We have used 1½-inch hose regularly in this department for the last two years. We have 300 feet loaded in horseshoe form on our trucks with 1½-inch fog nozzles attached ready for instant laying. It is the first line advanced at all fires unless the fire is small enough so that a 1-inch or booster line can handle it. The first pump arriving at a fire stretches the 1½-inch line, getting its water direct from its booster tank of 100 gallons capacity or more. Using the nozzle in the fog position we have approximately 1½ minutes or more of water supply which gives the second due pumper time to lay a 2½-inch line from hydrant to pumper intake of the first due pump.

We have found this method very successful as the 1½-inch hose is lighter, more easily handled. The latter is a great advantage in departments where manpower is a factor. It greatly increases the efficiency of the department, and, of course, due to the use of fog with a flow of only 55 gallons per minute, shows a marked reduction in water loss.

Roy T. Messerly, Chief, Zanesville, Ohio: We regularly use 1½-inch lines in our department. We stretch the 2½-inch lines from hydrant to the fire, then using a gated wye branch into two lines of 1½-inch hose into the fire.

It is used at all residential fires and all small fires that have not gotten out of the building before the arrival of apparatus. We back up the 1½-inch with 2½-inch upon the arrival of other companies.

Increased efficiency and smaller water damage result from the use of 1½-inch hose. We, like most departments, are very much undermanned and 1½-inch hose is easier to use and maneuver than 2½-inch hose.

H. E. Roberts, Acting Chief, Monroe, La.: On all occasions a 1½-inch line is laid. It is used at house fires, small business house fires, trash fires and automobile fires.

All 2½-inch lines are branched into two 1½-inch lines. First company at a fire uses 1½-inch hose to fight the fire. The second company backs up the first company by standing by ready to change to a 2½-inch line.

The 2½-inch lines will knock out a large fire quicker than the small lines, and after the fire is under control we change to 1½-inch lines and complete the overhauling.

All our 1½-inch lines are equipped with fog nozzles. We also use fog nozzles on the 2½-inch lines.

J. C. Fitzgerald, Chief, Asheville, N. C.: We use 1½-inch hose regularly in our department. Our procedure is to stretch in 2½-inch lines. If the fire is of sufficient size to justify a large line, it is used to knock down the large blaze. The line is then reduced to 1½-inch and the fire is extinguished with the small line. On fires in attics and roofs the 2½-inch line is laid in and two 1½-inch lines branched off, using one in the attic and one of the roof.

The use of 1½-inch hose in desirable places adds a great deal to the reduction of damage by water. This department, as many are, is greatly undermanned, and in using the 1½-inch line, one man can operate it, leaving the others for other duties. I do not hesitate to recommend the use of 1½-inch lines, providing they are backed up with a 2½-inch line.

Frank F. Schroeder, Chief, Everett, Wash.: We have found 1½-inch lines very effective on residential fires and fires in small business establishments. We use them on these fires because the water damage is so greatly reduced. We carry two 100-foot lengths of 1½-inch hose at all times. When we use them we lay 2½-inch hose from source of water to the fire and they wye the two 1½-inch for use. The 1½-inch lines are also used to mop up after large fires.

By using one line inside and one out, we can cover the exposures more efficiently. They are much more maneuverable and the water loss is almost negligible.

Lee P. Harrington, Chief, Waco, Tex.: We use 1½-inch hose on practically all fires. One and a half-inch hose is used on any fire which has not gained too great a headway. The first machine to arrive lays 1½-inch lines and uses water from booster if the fire is not through the roof. The second company lays 2½-inch line to back up the 1½-inch. Other companies to arrive use 2½-inch unless otherwise instructed.

In using 1½-inch from booster you can handle seventy-five per cent of the fires. To play safe we always back up with as many 2½-inch lines as we think necessary to take care of the fire involved.

C. L. Bolz, Chief, Pasadena, Cal.: We use 1½-inch hose on practically all fires in residential districts.

Our procedure is to branch two 1½-inch lines from a single 2½-inch lead in. This is our initial lay, and if necessary to lay additional lines, the same procedure is used. We seldom find it necessary to use 2½-inch lines on residential fires.

I am somewhat surprised that this question should come up—the use of 1½-inch lines on residential fires has proven its value for such a long period, I thought everyone in the fire service was familiar with it. Reduction in water damage, of course, is a very important item, but mobility and ease of operation, enabling one man to move freely about in the interior, in attics, etc., is of great value. In addition, at a much less discharge than a single tip on a 2½-inch line you have two directions of attack or coverage in that you have two lines instead of one. There is less likelihood of injury due to smaller tips and less pressure. Downtown or in the high value district, we naturally lay in with the large lines. However, even here there comes a point when by branching into 1½-inch lines, particularly in overhauling, the operation is more efficient and water damage much less.

M. E. Clark, Chief, Williamsport, Pa.: We have had 1½-inch hose in use in

(*Continued on page* 646)

HERE IS THE QUESTION

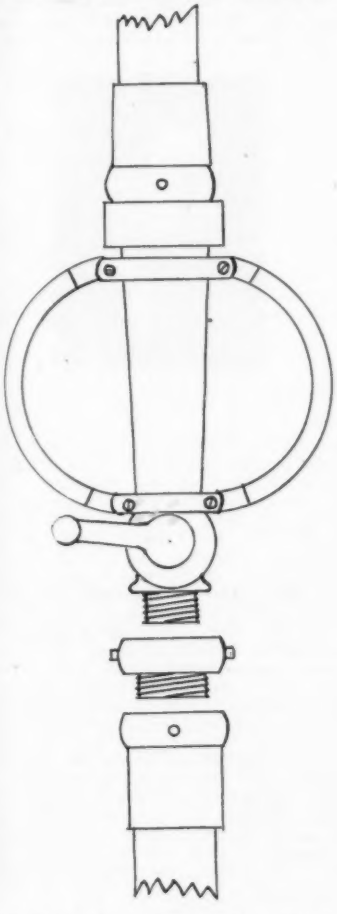
1. **Do you regularly use 1½-inch hose in fire extinguishing operations?**
2. **What is your procedure with regard to 1½-inch hose:**
   - **(a) At what fires is it used?**
   - **(b) Is it stretched in before larger lines, or is it used only in special cases?**
3. **What benefits result from the use of 1½-inch hose, such as increased efficiency, reduction of water damage, etc.**

Short Cuts and Gadgets

ADAPTER FOR EXTENDING LINES

In operating lines inside large buildings it is often found necessary to advance a considerable distance after the line has been placed in operation. This involves either or both of two difficulties, lack of sufficient slack and/or the weight of the charged lines.

These difficulties may be overcome by adding hose to the original stretch.



With the adapter shown here, this can be done with very little loss of time by bringing up the extra hose with an extra nozzle attached, closing the shutoff on the first nozzle, replacing the tip with the adapter and adding on the extra hose with its nozzle, thereby saving the time it would take to trace the line back, having it shut down and getting a signal back to the source of supply after the change had been made.

This adapter may also be used to shift a hand line over to special appliances such as cellar pipes or deluge sets.

After making a hookup of this kind engine pressure should be stepped up slightly more than enough to take care of the extra hose, as there will be a little extra resistance caused by the nozzle that is left in the line.

The male thread is standard two and one-half inch and the female thread is underwriters' tip thread, two and three sixteenths O. D. by twelve pitch.

HENRY T. HANSON,
Maynard, Mass.

* * *

"OFFICER ON DUTY IS CAPTAIN UMPFPH"

As a little item of improved public relations, we like the idea being adopted by more and more fire departments of placing the name of the officer in charge of a company in some conspicuous place, such as on the watch-desk, or in a bracket or frame near the entrance of the fire station.

Neatly lettered, cleanable name-plates or cards bearing the name of all officers can be supplied personnel at little cost. These can be of uniform size to fit standard-sized mounts or frames in the company quarters, or fire department headquarters' offices.

Sort of puts the fire department up in the bankers' class, it does!

* * *

The Old Timer Says—

When you're climbin' and descendin' stairways in old type buildings that are on fire, or have been subject to fire, it's a good plan to stick close to the wall. And if you aren't sure the stairway or the treads are safe, put a straight ladder up the flight, and use that!

* * *

"BORDER LINE" HYDRANTS

In order to eliminate confusion and make certain a community fire force can distinguish its own fire hydrants, where two or more political subdivisions adjoin each other, it is advisable to paint the hydrants of each different and distinctive colors. (W.B.R.)

WHAT'S YOUR GADGET?

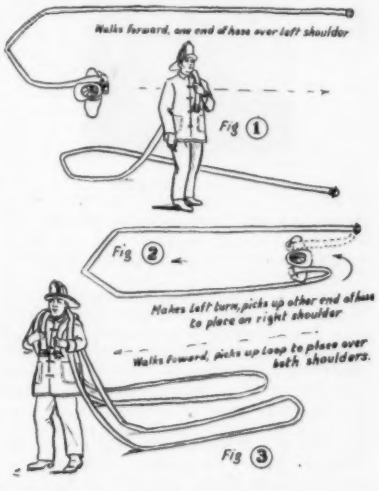
At some time in his career almost every fireman has devised a "short cut" or a "gadget"—or both, for doing a job better, more quickly, cheaply or conveniently. It may be an operation like a formula for figuring back pressure or a finished product like an improved plaster hook—it doesn't matter what it is; if it will contribute to the advancement of fire fighting FIRE ENGINEERING wants it—and will pay for it at the rate of $1.00 for an idea without illustration and $5.00 where usable sketches or photographs are furnished. Address Editor "Short Cuts and Gadgets," FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

ONE-MAN, ONE-SECTION HOSE CARRY

The late Bob Criswell used to demonstrate a one-man, one-section hose carry that had merit. We have adapted the following from his "short-cut" as published in "Tricks of the Trade", issued in 1941 by the Fire Department Instructors' Conference.

With the hose stretched out at full length, flat on the ground, the man starts at one end by picking up the coupling and bringing it over his shoulder so that it hangs down to about the lower part of his chest, somewhat above his waist. (Fig. 1).

He then walks over to the other coupling, turns around as shown in


Walks forward, one end of hose over left shoulder
Fig 1
Fig 2
Makes left turn, picks up other end of hose to place on right shoulder
Walks forward, picks up loop to place over both shoulders.
Fig 3

ONE-MAN, ONE-SECTION HOSE CARRIES

Fig. II and picks it up. With a twist of the wrist he places this end of the hose over his other shoulder. The couplings hang straight down over the shoulder. The male coupling should hang a little lower than the female coupling so that the male threads will not be battered by the other coupling.

Holding the hose on his chest, the man walks toward the center loop as shown in Fig. II. Then he picks up the center lop, throws it over his heads, lets it rest on the back of his neck, and continues walking as shown in Fig. III.

These operations take very little time. The hose may be allowed to drag, or both of the dragging loops may be picked up with the hands.

When climbing a ladder, the loops hang outside of the beams. To unload the hose on the ground, the arms are passed behind the hose and the couplings are grasped and swung outward.

One man can drag one or a few sections of hose a short distance by placing one end around his hips from one side and holding the coupling on the opposite side with his hand. In this way he can make use of his leg muscles, which are more powerful than his arm muscles. This method is useful when preparing to couple hose.

* * *

The Old Timer Asks—

When was the last time you had "open house" in your fire department? Many communities periodically hold "open house" in all their fire stations as a good will builder!

Manufacturers' Announcements

Extinguisher Ass'n Meets

James O. Binford, general sales manager of the American-LaFrance-Foamite Corporation, Elmira, New York, was elected president of the newly formed Fire Extinguisher Manufacturers Association at the first meeting of the Association's Board of Directors on Wednesday at the Waldorf-Astoria Hotel in New York City.

James O. Binford

Paul W. Eberhardt, vice-president of Walter Kidde & Company, Inc., Belleville, New Jersey, was elected first vice-president and Maynard A. Laswell, vice-president of the C-O-Two Fire Equipment Company, Newark, New Jersey, was elected second vice-president. Together with the three officers, Charles H. Stephens, president of the Buffalo Fire Appliance Corporation, Buffalo, New York; Everett A. Warren, vice-president and treasurer of the General Detroit Corporation, Detroit, Michigan; Herman W. Diener, vice-president of the George W. Diener Manufacturing Company, Chicago, Illinois, and George H. Boucher, vice-president of the Pyrene Manufacturing Company, Newark, New Jersey, were named to the Board of Directors of the Association.

The Fire Extinguisher Manufacturers Association, which is composed of the sixteen leading meanufacturers of fire extinguishing equipment, representing about ninety per cent of the productive capacity of the industry, was formed as the result of a merger of the former Chemical Fire Extinguisher Association and the Manufacturers of Carbon-Dioxide Fire Extinguisher Equipment.

Executive offices for the new Association will be maintained at 501 Fifth Avenue in New York City.

FWD Announces New Model Fire Engine

Details of a new 750 gallon triple combination FWD fire fighter were released recently by The Four Wheel Drive Auto Company, of Clintonville, Wis. The new Model F75T, developed as a standard FWD fire fighting unit, is the outgrowth of over thirty years experience in custom-built fire truck manufacture.

The F75T, now in production, employs the FWD four-wheel-drive principle with a center differential which imparts a balanced tractive effort to all wheels.

When difficult operating conditions are encountered and traction is lost, a manually controlled lock eliminates the center differential action and provides positive drive to both front and rear axles. "In rural fire fighting," the manufacturer states, "it can be driven across country, over plowed fields, through swamps, directly to a creek or lake or other water source."

Powered with a six-cylinder 190 B.H.P. FWD engine, the Model F75T has a piston displacement of 525 cubic inches and develops 410 foot pounds of torque. The wheelbase is 160 inches.

Equipped with an FWD centrifugal 750 GPM two stage series-parallel pump, the new fire engine features large volume-low pressure and reduced volume-high pressure performance controlled by means of a transfer valve.

The new open type all steel body of 12 gauge steel with hardwood slatted removable floor has a capacity of more than 1,200 feet of double jacketed 2½-inch hose and 400 feet of double jacketed 1½-inch hose. The fire department type ladders mount on FWD special ladder brackets which hold the ladders securely in place.

A 150-gallon rust resistant water tank is located in the hose body. Equipped with splash surge plates, the tank has a six-inch filler with sloping top, forming a funnel for easy filling. The booster tank hose reel has a capacity of 200 feet of hose and is optionally mounted over the booster tank or ahead of the rear step.

The Model F75T fire fighter is furnished complete with a standard group of approved accessories which include siren, searchlights, electric lanterns, pike pole, crowbar, extinguishers, axes, hydrant connections and hose couplings.

The New FWD Model F75T 750-Gallon Triple Combination Fire Fighter

R. W. Cook Sales Manager of FMC

The appointment of Ralph W. Cook as sales manager for Food Machinery Corporation's Bean-Cutler Division at San Jose, California, has been announced by V. H. Matthews, Divisional Manager and a vice president of the Corporation. Mr. Cook succeeds W. H. Abildgaard.

According to Mr. Matthews, Cook joins the Bean-Cutler Division with a wide background in the Food Machinery Corporation agricultural field. Mr. Cook's initial experience with the Company began with the Peerless Pump Division at Los Angeles, where he was active in both sales and engineering, pioneering their sales work in the Arizona irrigation development. He later joined the Texas branch of that division, and for several years supervised turbine pump sales out of Houston.

R. W. Cook

During the Corporation's wartime Amphibian Tank program, Mr. Cook spent approximately three years carrying out expediting, purchasing, and field maintenance work for the program, both in Los Angeles and in Washington, D. C.

Mr. Cook brings to the San Jose Division, a diversified experience in handling agricultural and other products which should be helpful in his new duties with Bean-Cutler which produces agricultural sprayers, dusters, packing house equipment, and fog fire fighting apparatus.

W. P. Rice Made Sales Manager

Appointment of W. P. Rice as General Sales Manager of Ward LaFrance Truck Division, Great American Industries, Inc., Elmira, New York, is announced by A. A. Frank, Vice-President and General Manager. He will be directly in charge of all sales and service activities covering all products of the Division both domestic and export.

Rice entered the industry in 1921 with the Fageol Bus Branch in Oakland, California, later associated with GEIC and GMAC Divisions of General Motors and subsequently became a sales representative and manufacturers agent in the independent parts field. In 1938 he returned to GM with Chevrolet Motor Division, leaving the division

(*Continued on page 652*)

FALSE ALARMS

Modern Mother Hubbard

She went to the butcher's for spareribs and suet,
But found that some others had beaten her tuet.
She said she would settle for sausage or liver,
The butcher insisted he had none to giver.
She pleaded for pork chops—for meat balls—for mutton,
The butcher said, "Lady, I just ain't got nutton."

Six-year-old Kenny, who had gone to play with a friend down the street, returned home in great excitement to report that there was "a sign on the door."

"Did it say m-e-a-s-l-e-s?" his mother asked Kenny, who knows his letters but can't read. Kenny couldn't remember, so he hurried back, this time with pencil and paper to make a printed copy of the sign. It read: "Please wipe your feet."

A Chinese servant asked permission of his master to attend the funeral of a friend, also Chinese. The man gave his permission and jokingly added, "I suppose you will follow the old Chinese custom of putting food on the grave."

"Yes, sir," was the answer.

"And, still laughing, the man said, "When do you suppose the food will be eaten?"

The man was somewhat shaken out of his Occidental complacency when his servant replied, "As soon, sir, as the friend you buried last week will smell the flowers you put on his grave."

A gentleman of very high emotions had the misfortune of losing his 3rd wife. He took the affliction very much to heart, and at the graveside of his beloved was so overcome he fainted. His friends gathered around him and were fearful for his life. Among them was a German who spoke English brokenly. He stooped down and felt the gentleman's pulse, and looking up, said: "He's all right; he'll rewive."

Pride of Ownership

A customer waiting for a small job to be done on his car, watched a mechanic change the oil in another car without spilling a drop, check the radiator, clean the windshield, wipe away all the greasy finger marks, place a clean cloth over the upholstery, wash his hands thoroughly and drive the car slowly out to the street curb. "Now, there's a real mechanic," the customer observed to the foreman. "Oh," explained the foreman, "that's his own car."

I Heard It an Udder Way

First Cow: "Where are all the other girls?"

Second Cow: "They're over in the other lot having a bull session."

False Alarm

Brown was a very light sleeper. One night he was obliged to stop at a small hotel, and after much trouble finally succeeded in getting to sleep.

Two hours later came a loud knocking on his door.

"What's the matter?" he asked, sleepily.

"Package downstairs for you, sir," came a boy's voice.

"Well, let it stay there! It can wait until morning, I suppose?"

The boy shuffled down the corridor and after a long time Brown fell asleep again. Then came another knocking at the door.

"Well, what's up now?" Brown demanded.

"That package—t'ain't for you!"

A prominent American traveling in Italy in behalf of his government stopped at a small inn for the night, and instructed the native courier who accompanied him to enter his name in accordance with the local police regulations. Later in the evening he asked the servant if he had complied with his orders.

"Yes, sir," was the reply.

"How did you write my name?" asked the American.

"Well, signor, I can't pronounce it," was the reply, "but I copied it from your valise, sir."

The American could not remember having affixed his name to his luggage, but, being very tired, decided not to press the matter. The next morning he saw the light, when, upon coming downstairs, he was greeted by the desk clerk with, "Good morning, Signor Warranted Genuine Leather."

Sounded the Same

An American soldier went into a jewelry shop in Australia to have his name engraved on the back of a wristwatch. The girl behind the counter, who spoke a pronounced Cockney idiom, was most considerate.

"Righto, myte," she said cheerily, in response to the soldier's request to put his initials and last name R V Deane—on the watch. But the American, having had unsatisfactory experiences in the past, was especially explicit. "That last name," he cautioned. "It's D-E-A-N-E—don't forget the final 'e'."

Two weeks later when the soldier returned he was recognized at once. "'Ello there," said the girl cheerily, "Ay've your watch right 'ere, sir. And see, everything's spelled just right."

The soldier turned to the beautifully-executed script, and read: "Harvey Deane."

Prosaic Piffle

Pause that refreshed . . .
Pause for station identification . . .
Pause for emphasis . . .
Pause for a rest . . .
Paw's drunk again.

"Landing That One Took More Out of Me Than Carrying Three People Down a Ladder!"

Chief POWHATAN
REG. U.S. PAT. OFF.

PERFECT COMBINATION PLAY PIPE
WITH PLAIN TIP

Built to stand hard handling. This perfect combination is typical of all Powhatan Brass Goods—as hundreds of Fire Chiefs can attest the fact that they are built to "stand the gaff."

Powhatan Plate 100

HYDRANT CONNECTIONS

MALE AND FEMALE
Powhatan Plate 149

DOUBLE FEMALE
Powhatan Plate 150

We are fast returning to pre-war production and solicit your inquiries on new equipment—Write for our catalog today.

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RANSON, WEST VIRGINIA
Phones 93 & 94 Charles Town, West Virginia
Established 1892

Costly Three-Day Fire Taxes New York's Fire Forces

(*Continued from page 620*)

ficers and 70 men was ordered to the fire.

Wednesday, June 26.

At 2:00 A.M., Chief Murphy called for air compressors and drills to aid in opening up the 30-inch concrete in the piers; the fire was then traveling in the substructure to threaten the 69th street ferry slip.

At 3:19 A.M., signal 222-3-72, reporting the 69th street ferry out of service.

At 3:49 A.M. Special call for the fireboat "Duane" (E. 85) making a total of six fireboats at the scene.

From this period on, until the afternoon of June 28, firemen were called on special details to the punishing task of rooting out the substructure fire and extinguishing it. During this time all the city's fireboats except the "Harvey," which was in drydock, did some duty at the scene.

At 1:59 P.M. this same day, the recall was rescinded for Manhattan and Richmond fire forces.

Thursday, June 27.

The fire continued to burn persistently in the under-pinning of the Terminal. Men and apparatus, including boats, working in relays, fought it foot by foot.

At 1:18 P.M., Ambulance 1 again returned to the fire as the firemen continued to collapse from the heat and smoke.

Up until 4:00 P.M. on this day, according to Deputy Chief Joseph Scanlon, three shifts of 288 men, a total of 864, had been sent to the fire daily.

As the department entered its third day shift of the battle, the total number of firemen who operated on the fire reached 3,000, or more than one third the entire force. Among these, Chief Scanlon reported, were 100 firemen off duty, who volunteered and worked on the first day of the fire.

Friday, June 28.

At 12:10 P.M., the last Manhattan company (E. 7) returned to quarters.

At 5:49 P.M. the fire department's Field Kitchen returned.

During the afternoon the fireboat "Strong" (E. 51) tapped in-service, after the longest continued period of operation in its history.

The last Richmond company to return was E. 155, which also reached its quarters in the afternoon of the 28th marking the official end of fire department operations.

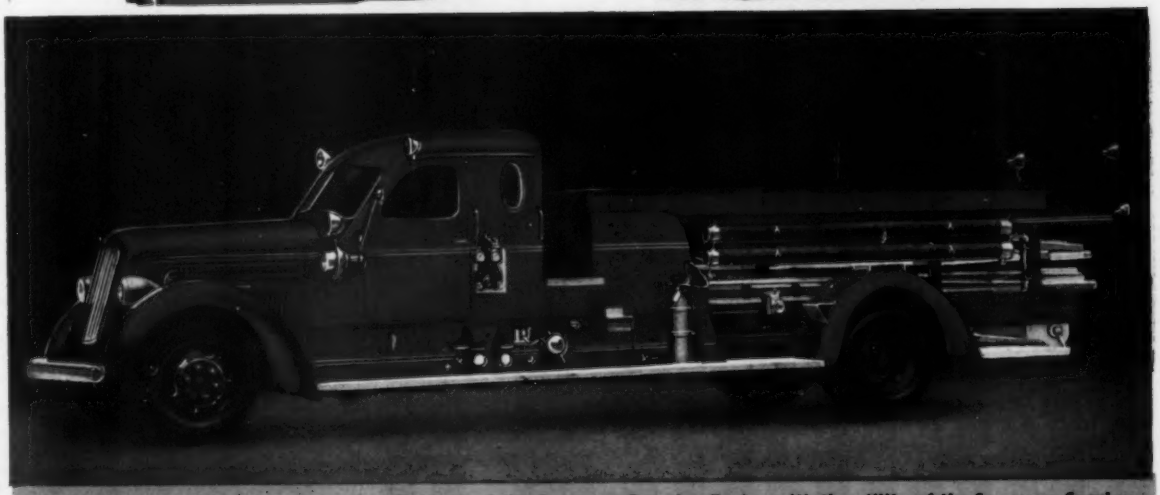
On July 2, the fire department transmitted signal 4-4-4—3-31, notifying all companies and personnel that service on the Staten Island Ferry from the Foot of Whitehall Street, Manhattan, to St. George, S. I., had been restored for the transportation of fire apparatus responding to fires in the Borough of Richmond.

The summary shows maximum forces at the fire were: 33 pumpers, six fireboats; two ladder trucks; two light units; one rescue unit; two fuel tankers; one ambulance and one field kitchen. In reserve, or locating, nine pumpers, six ladder trucks and two battalion chiefs.

The fire gave the department one of its hardest manpower and medical problems in years. By 6:00 P.M. the

Seagrave

THE ONE TO WATCH FOR NEW DEVELOPMENTS IN FIRE APPARATUS



THE SEAGRAVE QUAD—Combines the efficiency of the Seagrave Pumping Engine with the utility of the Seagrave Service Ladder Truck. The very latest model in design and new engineering features.

THE SEAGRAVE CANOPY CAB PUMPER—This new model is meeting the enthusiastic approval of fire services throughout the United States. Exclusive Seagrave design and construction throughout the entire pumper.

THE SEAGRAVE CORPORATION — Columbus, Ohio

Bickle-Seagrave, Ltd., Woodstock, Ont.

MILDEW-
PROOFED
BY
EXCLUSIVE
"FORMULA X"

Eureka *"Streamlined"* Fire Hose is *permanently* protected against the destructive and disintegrating attack of mildew. Long ago Eureka pioneered in constant analysis of the mildew fungi which strikes at cotton fabrics. The result was exclusive "Formula X"—tested under conditions which duplicated and even exaggerated normal fire hose service.

Eureka also has: Balanced Weaving which prevents excessive writhing . . . Smooth-Interior Filler Ply for maximum pressure at the nozzle . . . Bomb Tested Linings for longer life.

EUREKA

"For greater protection to life and property"

EUREKA FIRE HOSE

Division of United States Rubber Company

1230 Avenue of the Americas • Rockefeller Center • New York 20, N. Y.

27th, more than 300 firemen had been overcome by smoke or suffered eye inflammation or collapsed from heat exhaustion since the start of the fire. Thirty-eight of the fire-fighters were hospitalized and most of the rest treated and sent home.

This total does not include the injuries to Navy personnel, and to terminal and other workers, and volunteers.

Dr. Harry Archer, veteran NYFD Medico, put in two tours totaling 32 hours in all at the fire, with Ambulance 1, during which time it is reported 257 fire-fighters were treated or sent to hospitals. Other members of the Medical Division were also busy throughout the duration.

Navy and Private Forces Aid

Fire Commissioner Frank J. Quayle and Acting Chief-in-Charge, Frank Murphy both were lavish in their praise of the assistance given by Naval forces and the railroad and private tugboats and other craft.

The Third Naval District reported the Navy and Coast Guard sent four fireboats, six emergency trucks, a pumper, 250 men and an ambulance wtih medical officer to the scene from the Navy berthing facilities at near-by Tompkinsville, S. I.

During the three-day fight these Navy forces operated side by side with the municipal fire department, many of the personnel being overcome by smoke and heat.

As the illustrations graphically depict, Navy fireboats operated gunwale to gunwale with the city's fireboats, and with the privately owned harbor tugs and lighters that reported to the scene.

The NYFD field kitchen donated by the UFA (previously described in FIRE ENGINEERING) had its first long workout, during which it dispensed 100 gallons of coffee, 1,500 sandwiches, 30 gallons of milk, etc. "Third Alarmers" assisted in dishing out the refreshments from the field kitchen with New York's Fire Bell Club members also aiding.

A number of delegates stole away from the convention sessions of the Eastern Association of fire chiefs to have themselves a 'busman's holiday," at the fire.

June Fire Losses

The nation's fire losses during June totalled $44,240,000, an increase of 29 per cent over June, 1945, it was announced by W. E. Mallalieu, General Manager of the National Board of Fire Undewriters. The estimated fire loss is based on incurred losses reported to the National Board by member companies plus an allowance for unreported and uninsured losses.

June's fire loss brought the total for the first six months of 1946 to a record-breaking $297,306,000, which is greater than the aggregate fire loss for any single full year from 1933 to 1940.

Over a period of years, fire losses have declined during the summer months. Losses for June reflected this seasonal decline only slightly, decreasing 4 per cent from losses of $46,094,000 reported in May, 1946.

Losses for the 12-month period ending June 30 were estimated at $519,244,000 as compared with losses of $442,877,000 for the 12-month period ending with June, 1945.

From Chief Kirch of Dubuque

"I cannot praise your net too highly"

From Asst. Chief Cosgrove

"If you could hear the praise for your life net from those who were rescued, you would feel doubly as proud of your product as the Dubuque firemen are"

ATLAS LIFE NETS prove invaluable at Dubuque

To Chief Kirch, to Asst. Chief Cosgrove, to the firemen and civilian volunteers of Dubuque, we extend to you our appreciation of a job well done, heroically done!

The Canfield Hotel fire was a test of men and equipment. We appreciate the praise of Chief Kirch, Asst. Chief Cosgrove and the many persons that were saved with Atlas Fire Nets. The rescue work at this notable fire was in keeping with the highest tradition of the fire service.

There is one outstanding lesson we can learn from this fire, and that is—to *always carry life nets and have them ready for instant use.* You can never tell when you'll need them but when you do, they will serve you well; and too, that when seconds count, life nets offer you speed in making rescues.

Do this NOW! (1) Check your life nets for weakness. If they are old and questionably safe, replace them with new ones. (2) Specify ATLAS LIFE NETS when drawing up specifications for new apparatus.

ATLAS SAFETY EQUIPMENT CO., Inc.

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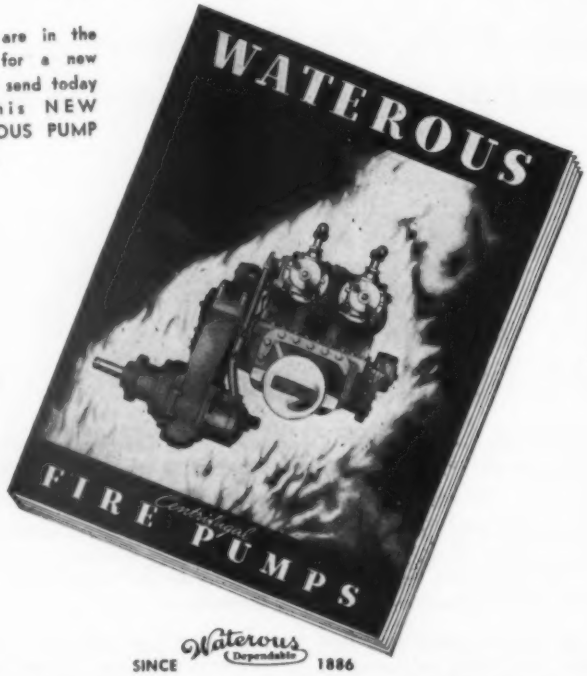
TWO OUTSTANDING FACTS FROM THE CONVENTION

(as viewed from the WATEROUS Exhibit)

FACT 1. Great numbers of WATEROUS users stopped to visit — and tell us of the splendid service they are getting from their WATEROUS Pumps. It's the same story from Maine to California — from Canada to the Gulf.

FACT 2. The increasing number of Fire Chiefs who are interested in a WATEROUS for their next pumper — most of them had been talking to WATEROUS users!

If you are in the market for a new pumper, send today for this NEW WATEROUS PUMP catalog.



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WATEROUS COMPANY • ST. PAUL, MINNESOTA

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FIRE PUMPS

New England Chiefs Hold 24th Conference

The New England Association of Fire Chiefs held its twenty-fourth annual conference at Wentworth-by-the-Sea, Portsmouth, N. H., on June 25-27. The attendance was nearly 600, with an overflow to neighboring hotels of nearly

Chief Frank J. Callahan, Left, Newly Elected President of the New England Association of Fire Chiefs, Pins a Past President's Pin on the Retiring President, Chief Allen F. Payson

100. Twenty-five manufacturers staged exhibits in the exhibit hall of the hotel, under the supervision of Chief Daniel B. Tierney, Chairman of Exhibits.

A very fine technical program was provided, to keep the delegates at work for two and a half days. Chief Allen F. Payson, of Camden, Maine, President of the Association presided. The program included the following topics: "The Need of Minimum State-Wide Building Regulations for Fire Protection and Other Purposes" by Philip Nichols, Chairman, Massachusetts State Board of Housing; "Business Outlook. Now is the Time to Get Municipal Appropriations, New Equipment, More Boxes and Better Wages" by Roger W. Babson, Wellesley, Mass.; "The Standards for Fire Apparatus" by George L. Swan, Assistant Chief Engineer, The National Board of Fire Underwriters, New York, N. Y.; "Organization and Training of Small Departments" by Roger W. Rodman, Chief, North Kingston, Rhode Island; "Fog Versus Foam" by Fred Shepperd, Editor, FIRE ENGINEERING, New York; "Safe Life of Tires in the Fire Service" by J. E. Powers, Manager, Truck and Bus Tire Department, B. F. Goodrich Company; "Arson Control" by Francis J. Allen, Special Agent, The National Board of Fire Underwriters; "Fireman Training in the Postwar Era" by M. Norcross Stratton, Director, Vocational Education, Commonwealth of Massachusetts; "Regulations for Safeguarding Lives in Buildings Converted for Use as Convalescent Homes, Lodging Houses or Nurseries" by Edward J. Hickey, Commissioner of State Police, Hartford, Conn.; "Fire Prevention through Regulation" by E. H. Whittemore, State Fire Marshal, Commonwealth of Massachusetts; "Fire Protection of Industrial and other Buildings during Strikes" by Chief Victor Veit, Stamford, Conn.; "Taxpayer Fires" by William H. Taubert, Deputy Chief, New York Fire Department; "The Control of Outdoor Fires—A Problem in Forest and Municipal Protection" by John H. Foster, State Forester, New Hampshire; and "Experiences and Sugges-

ASK A FIRE FIGHTER ABOUT

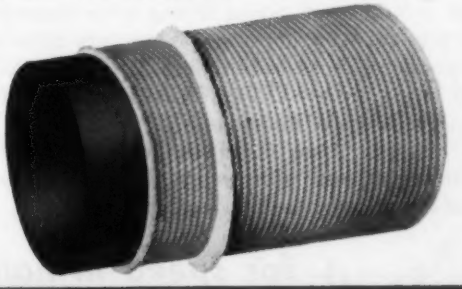
COMPACT BWH FIRE HOSE!

Fire fighters who have used BWH Fire Hose will tell you it's really tough, as pressure-proof and puncture-resistant as hose can be, yet surprisingly light and flexible.

Compact, with a tightly woven cotton jacket permanently fused to the butted rubber tube with steam, BWH Fire Hose will give years of constant, unfailing service.

Of equally high quality are the nozzles, couplings, and other brass fittings produced in the modern BWH foundry. Machined to exacting specifications, they provide additional assurance of top performance.

Insist on BWH, and profit by 67 years of experience in the production of quality fire hose.



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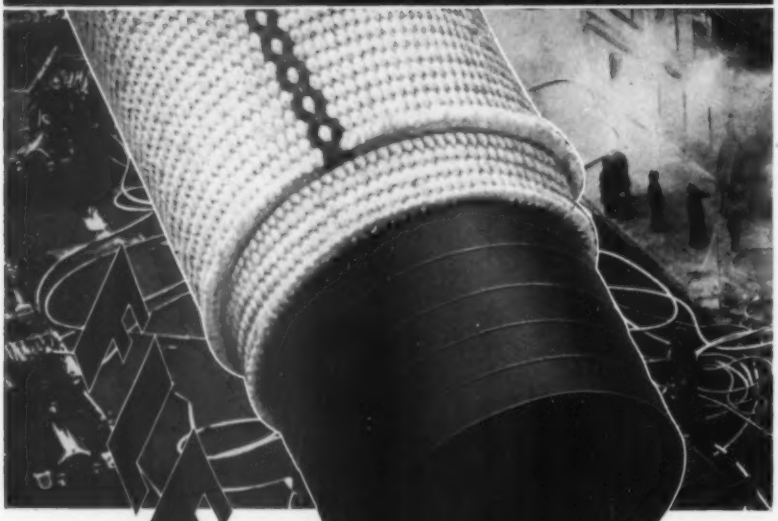
Crackerjack
MUNICIPAL FIRE HOSE



FLEXIBLE

specially built for *extra* flexibility

The extra flexibility built into CRACKERJACK fire hose pays a bonus in *minutes* saved and *energy* saved every time it is used. There is obvious economy in selecting a hose that is often going strong after twenty years of active service. More important is the year after year dividend in speed and ease of handling. CRACKERJACK lays faster and loads easier. CRACKERJACK folds easier, making it possible to load far more hose in the hose body. This is the result of using the finest materials and special processes developed over nearly half a century of quality hose manufacture.

FLEXIBLE for speed in handling
FLEXIBLE for ease of handling
FLEXIBLE for compact loading

The AMERICAN RUBBER Mfg. Co.
Park Avenue and Watts Street • Oakland, Calif.

tions for Small Town Protection" by Chief John E. Holden, Newington, N. H.

In addition to the above papers, Chief Selden R. Allen, Brookline, Mass., showed some educational pictures and led a number of round table discussions.

Officers elected for the ensuing year were: Chief Frank J. Callahan, Central Falls, R. I., President; Chief Arthur W. Spring, Laconia, N. H., First Vice President; Chief William H. Hill, Belmont, Mass.; Second Vice-President; and John W. O'Hearn, Watertown, Mass., reelected Secretary-Treasurer.

The Board of Directors include Chief Oliver T. Sanborn, Portland, Me.; Chief Anthony J. Molloy, Nashua, N. H.; Chief Alfred H. Koltonski, Rutland, Vt.; Chief Stuart M. Potter, Greenwich, Conn., and Chief Thomas H. Slaman, Wellesley, Mass.

Chief William J. Dooling, Hood Rubber Company, Watertown, Mass., was appointed Sergeant-At-Arms.

Chief Wandras Elected President of Eastern

At the concluding session of its 19th Annual Convention, held in New York City on June 24-26, the Eastern Association of Fire Chiefs elected Chief William G. Wandras of Kearney, N. J., president for the forthcoming year, to succeed Assistant Chief Frank Dean of Lancaster, Penn.

Others elected were Chief Rudolph Swanson of Jamestown, N. Y., first vice-president; Herbert A. Friede, Superintendent of Fire Alarm, Washington, D. C., second vice-president; Chief George Mitchell, East Orange, N. J., re-elected treasurer, and Chief Charles E. Clark, Wayne, Penn., re-elected secretary.

Among the resolutions unanimously adopted by the Association was one which condemns commercial radio's practice of indiscriminate "flash" broadcasting of fires and similar emergencies. The resolution claims that practice impedes the efficient operation of the emergency services and causes serious confusion in emergency communications. The resolution adopted is similar to that approved by the International Municipal Signalmen's Association, and it is reported it was presented before the Cleveland convention of the International Association of Fire Chiefs.

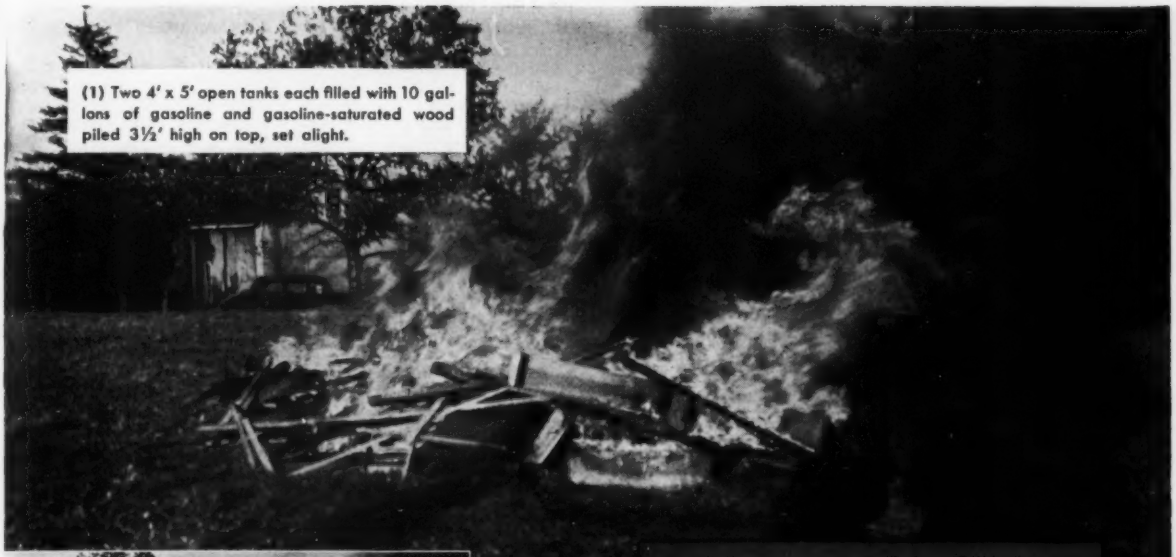
Another resolution also unanimously adopted cautioned the fire service to be critical in entertaining proposals of fire-fighting equipment advanced by other than known reputable manufacturers and distributors.

Persons in the News

Chief W. F. Bowers Dies

William F. Bowers, late chief of the Boston, Mass. Protective Department (Salvage Corps) and widely known friend of the fire service, died in Jamaica Plains, Mass. July 15.

Chief Bowers had been connected with the Boston Protective Department for the past forty-two years, being advanced to lieutenant, captain and chief progressively. He has been chief for the last seven years. He was a member of



(1) Two 4' x 5' open tanks each filled with 10 gallons of gasoline and gasoline-saturated wood piled 3½' high on top, set alight.

(2) Within 10 seconds nearer, part of fire is subdued.

(3) At end of 35 seconds, fire is extinguished.

(4) Operator with 25 GPM FIRE-SNUFFER NOZZLE.

StrangleAIR FOAM AND FIRE-SNUFFER NOZZLES

War-Proved Fire Extinguishing Agents Give You Faster and More Effective Fire Fighting

StrangleAIR FOAM will isolate, subdue and extinguish fires quickly and effectively. A coating will cling to any surface, horizontal or vertical, and last for hours, or until fire has been extinguished and danger of re-ignition removed. StrangleAIR is clean, white, odorless, non-toxic. It will not injure paint, woodwork, furniture or carpet. StrangleAIR prevents formation of noxious or dangerous fumes and eliminates flashbacks. Cut fire losses and give greater protection to fire fighter with StrangleAIR.

FIRE-SNUFFER NOZZLES, bright nickel finish with red trim, are easy to clean and easy to handle. These units are specially designed to deliver foam with uniform consistency. They are available in standard sizes from 2½ GPM to 250 GPM.

StrangleAIR FOAM and FIRE-SNUFFER NOZZLES can be obtained through fire appliance supply houses.

For prompt, complete information fill out coupon and mail today.

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StrangleAIR FOAM · FIRE-SNUFFER NOZZLES

AMERICAN DIE & TOOL COMPANY, INC., East Reading, Pennsylvania

the International Fire Chiefs Association, New England Fire Chiefs Association and trustee of the Boston Firemen's Relief Association. He leaves a widow, two sons and two daughters.

Chief Fifarek of Traverse City Dead

Joseph Fifarek, 57, Chief of the Traverse City, Mich., Fire Department for the past nineteen years and an active member of state and national fire service organizations died on July 1, 1946, following a three-day illness.

He became a regular member of the department March 1, 1924, was appointed captain in 1925, and two years later was elected to the post of chief.

Chief Fifarek was a member of the Michigan State Fire Chiefs Association, the International Association of Fire Chiefs, Traverse City Lodge of B. P. O. E., Aerie 383 of the F. O. E. and the Greek and Bohemian Club. Surviving are the widow, two daughters, one son, three brothers, three sisters and two grandchildren.

Chief Bell Dies

Fire Chief Harold Bell, 48, head of the Jackson, Mich., Fire Department since September 1, when he was named successor to Fire Chief Ernest Daunter upon the latter's retirement, died June 29 from a heart attack suffered earlier in the day.

Chief Bell left his quarters at No. 1 Engine House in the morning to return home, feeling ill. His condition grew worse and in the late afternoon he succumbed.

Chief Bell joined the department in 1917 and obtained leave in July, 1918 to join the Army. He returned to the department in March, 1919. He was appointed lieutenant in January, 1922, and promoted to captain in September, 1927. In September, 1938, he was named fire inspector and served in that capacity until being made acting assistant chief on May 1, 1945. He was appointed assistant chief on August 15, 1945, and became head of the department two weeks later.

Sandeman Chief at Long Beach

Batallion Chief Sandeman was appointed Chief Engineer of the Long Beach Fire Department on February 19, 1946, by City Manager Samuel E. Vick-

Chief F. S. Sandeman

ers. Mr. Vickers' appointment was unanimously confirmed by the City Council.

The appointment of a new fire chief for the City of Long Beach was made necessary due to the retirement of Chief Allen C. DuRee after service of 26 years, 12 of which were served as Chief.

Mr. Vickers had the assistance of a supervisory committee composed of Chief Alderson, Los Angeles Fire Dept.; Chief Bolz of Pasadena, and John Colton of the National Board of Fire Underwriters. This committee interviewed 17 applicants for the position, not including Major M. M. Clement who is absent on military leave.

Chief Sandeman was appointed regular fireman for the City of Long Beach on July 16, 1927; promoted to Captain on April 1, 1935; promoted to Drillmaster on September 1, 1943, and promoted to Battalion Chief on July 1, 1945. All these promotions were a result of having competed successfully on Civil Service competitive examinations.

Chief Sandeman is 46 years of age, married and the father of two children. His son, Douglas, was recently discharged from the Navy after five years continuous service on a destroyer. Chief Sandeman, himself, is an ex-serviceman.

QUAKER'S MODERN MUNICIPAL
FIRE HOSE
with
EASY FOLD CONSTRUCTION

Gives to Fire Chiefs and other Fire Officials the feeling of security when they use Quaker's Municipal Fire Hose with Easy-Fold Construction.

"If there is a way to get it done . . . Quaker will do it."

FIRE HOSE
CHEMICAL HOSE
FORESTRY HOSE
SUCTION HOSE

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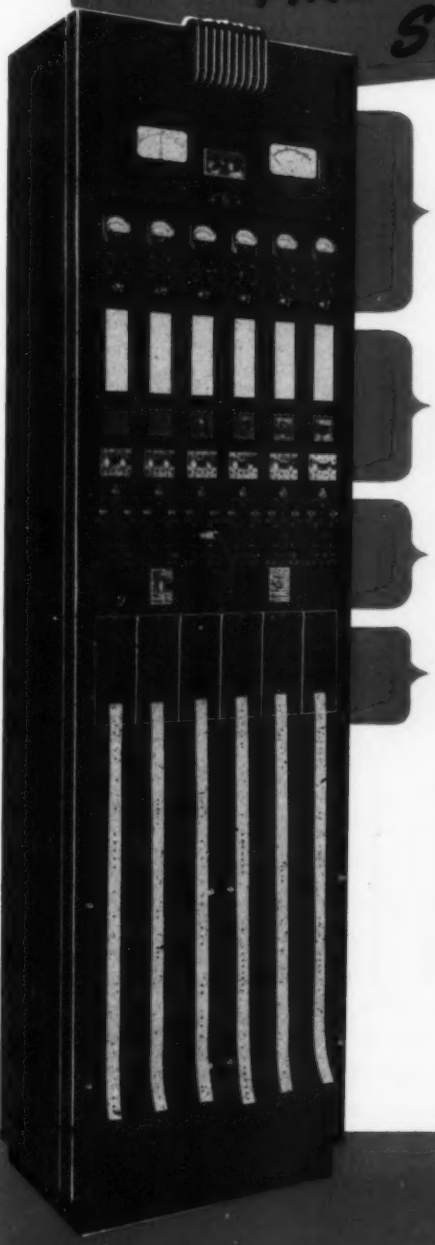
FIRE ALARM T·E·L·E·G·R·A·P·H SWITCHBOARDS



Master equipment with its associated line equipment incorporated within the **same cabinet** and mounted in such a manner as to eliminate a separate master panel. **Separate meters** for each line. Individual supervising equipment.

Box designation card provided for each circuit **180-box capacity**. Separate testing equipment for each circuit. All circuits arranged for **automatic grounding** in case of line break.

Instrument jacks and telegraph keys **insulated for 5,000 volt** above ground, for each circuit. All controls are conveniently arranged and designated.

Separate spring driven, triangular hole punching register for each circuit — panel-mounted electrically zoned, using 1" paper tape.

Current supplied by improved **single battery**, thus eliminating separate line batteries for each circuit. Panel groups in multiples of six circuits to facilitate **convenient expansion** to city's growth. Cabinet is modernly streamlined with rounded corners. Testing space and accessibility has been carefully provided for.

Write for complete details and specifications.

MANUFACTURED BY

SOUTHERN SWITCH & SIGNAL CO. INC.

213 AIRPORT DRIVE — SHREVEPORT, LA.

having served in World War I as motorcycle dispatch rider which included two years overseas service.

Chief Pope Named by Hub Hotels

Samuel J. Pope, president of the International Association of Fire Chiefs and former Chief of the Boston Fire Department, has been appointed safety consultant of the City of Boston Hotel Association, it has been announced.

Chief Pope, will inspect and supervise monthly tests of all fire fighting equipment used in the Hub's hotels, and will drill and train employes of hotels in fire prevention and safety work.

M. M. Brandon Appointed Electrical Engineer

The Executive Committee, Board of Trustees, of Underwriters' Laboratories, has promoted Merwin M. Brandon to the position of Electrical Engineer. Effective immediately, Mr. Brandon assumes full responsibility and direction of the activities of the Electrical Department of the Laboratories at the Chicago, New York, and San Francisco testing stations.

Brandon will also serve as Chairman of the Electrical Council of the Laboratories.

In September, Brandon will have completed 25 years of service with the Laboratories. He is a graduate of Mississippi State College, B.S. 1919, E.E. 1936; is a Fellow of the American Institute of Electrical Engineers, and holds Professional Engineers' licenses from both New York and Illinois. He has been active in the affairs of the International Association of Electrical Inspectors and of the Electrical Committee (N. E. Code) of the National Fire Protection Association.

Fire Marshal Scott Honored

Fire Marshal W. J. Scott was honored in the Dominion Day Honors List of awards for civilians for outstanding war work. He was made an Officer of the Order of the British Empire. Fire Commissioner Ernest Lavigne of Quebec also was awarded the O. B. E.

Commander Firebrace Visits the Dominion

Chief of the British National Fire Service, Commander Sir Aylmer Firebrace, C.B.E., R.N. (Rtd), was a visitor to the Dominion in May and a guest speaker at the annual meeting of the Dominion Fire Prevention Assn., and the Association of Canadian Fire Marshals. During his stay he addressed numerous gatherings and was tendered welcomes by members of the Dominion's fire service. He formally reviewed the former members of the Corps of Canadian Fire Fighters who served under him in Great Britain.

Commander Firebrace addressed the Boston convention of the National Fire Protection Association.

Chief D. W. Brosnan Lauded

Ralph McGill, Editor of "The Atlanta Constitution," leading daily of Atlanta, Ga., recently had the following to say regarding Chief Brosnan. McGill's article appeared in the June 19th issue of "The Atlanta Constitution":

"A lot of persons have thumped a tub for Fire Chief D. W. Brosnan, down at Albany, Ga., (known fondly as All-Benny). He doesn't really need another tub thumper, but I want to hit a few thumps for him because I know he won't mind and I can use him to illustrate a point.

"Chief Brosnan has been fire chief down at All-Benny for nigh on to 30 years. In that time he has never lost one of his own men or the life of a citizen. He has had some tough fires, too.

"Once he had to go in and pull out some of his own firemen, put them on an elevator and get them out. They were unconscious at the time. The fire had burned most of the oxygen out of the air and their masks were no good. The chief had no mask. To this day the men don't understand it and the story has become a legend. The legend has it that the chief's chew of good, fine-cut served as a mask, filtering out the gas.

Cash Dividends. "Insurance rates in All-Benny are lower than in any other city in Georgia, and I think, the South. The Chief has given All-Benny fire protection that has won for that city so many national awards there isn't room on the city hall walls to hang all the plaques.

"The chief has his entire departments out every Friday morning, rain or shine,

Super-Powered Portable
ELECTRIC MEGAPHONE

Saves Lives!
Controls Panic!
Directs Crowds!

Tool for Firefighters

A portable but powerful loud-speaker should be standard equipment for every fire department. It could assist the officer in charge in directing the efforts of his men. It could assist the police in controlling spectators. It might save many lives by enabling firemen and police to communicate with and to coach persons trapped in burning buildings.

from CHICAGO DAILY NEWS
Friday, June 7, 1946

Amplifies the Human Voice
PROJECTS
CLEAR SPEECH
UP TO ½ MILE

Indispensable as standard equipment for fighting fires and directing orderly dispersal of crowds. Fire chiefs can direct operations of men on ladders or roofs, warn them of impending dangers, speak to and advise people who through lack of direction are lost or trapped. Beams the voice directly to the desired area.

Completely portable! Carries its own power! No wiring, no stringing of speakers, no headphones. Ready for instant use in emergencies. Just attach cable, press trigger switch . . . and normal speech voice is projected clearly and distinctly to a distance of one-half mile and more. Weighs only 11 pounds. Operates efficiently rain or shine. Sturdily constructed. Simple to operate. Fire departments will find this Portable Electric Megaphone a valuable addition to their fire-fighting equipment. Write for complete details, NOW!

INTERNATIONAL INDUSTRIES, INC.
6525 North Clark Street • Chicago 26, Illinois

KLEERLINE HOSE COUPLINGS

USE THE BEST FIRE HOSE ON THE COUPLING

KLEERLINE couplings cannot snarl or catch on obstacles no matter how much or where your fire hose is used.

All protruding lugs and parts are done away with, being streamlined insures the clearance of all obstacles, being streamlined there is nothing to tear or wear holes in hose, being streamlined means easier coupling and uncoupling—and moreover, they are rugged enough to take the roughest punishment.

Specify KLEERLINE Couplings on all your new hose. Many prudent chiefs are ordering KLEERLINE replacements on their present hose.

Your dealer has full information.

FASTER STREAMLINED BETTER MODERN DESIGN

ANDERSON FIRE-FIGHTING EQUIPMENT COMPANY, INC.

407 WEST 36th STREET NEW YORK 18, N. Y.

hot or cold. They climb buildings, lay out hose, use their drill tower and otherwise keep in shape.

"I figure that if a baseball team needs practice a fire-fighting team does, too," say the Chief.

So practice they do.

The Law. "All-Benny has a first-rate building code. It is not better than the one voted by other cities. But Chief Brosnan makes it stick.

"Some or the builders squeal like pigs moving toward the packinghouse knife when the Chief says, "Put some automatic sprinklers in there."

"But they put them in. There is no such thing as a fireproof building. And the automatic sprinkler watches all the time. The chief has the say so and he makes the law stick. There are no politics strong enough to evade the law.

"And, it must be said, the people of All-Benny, even those with "influence," have enough sense and civic enterprise not to try too hard.

"Maybe the reason is they know the Chief would quit before he would cheat on the law.

"So, the law sticks.

"And every businessman and citizen of his city gets the benefit in cash—reduced insurance rates.

"Incidentally, the Chief says hotels, even the so-called fireproof ones, should be "sprinkled."

Our Hat is in the Ring!

WE CHALLENGE COMPARISONS

Gorman-Rupp engineers, with long experience in pump design, have perfected what we consider the best lightweight portable fire fighting pump built. The "Dual Fire Fighter" is invaluable as a booster pump when the big truck pumper cannot get to a source of water. Weighing only 155 pounds, it can be easily carried by two men to the nearest water supply. It is primed by an ingenious exhaust primer in from 15 to 30 seconds and will relay 175 gallons of water over a 30 to 50 foot hill through 300 feet of 2½ inch hose. This will supply four ⅜ inch nozzles each delivering 40 gallons at 90 pounds.

The Dual Fire Fighter can also be used to fight fires direct when the truck pumper is not available or is impracticable.

Carry a Dual Fire Fighter on the truck pumper. You may save its small cost in one operation.

Complete information is contained in our bulletin FD-3.

Some territory open for live distributors.

THE GORMAN-RUPP COMPANY

BOWMAN STREET • MANSFIELD, OHIO

The Round Table

(*Continued from page 630*)

the Williamsport Fire Department for the past fifteen years.

All our pumpers carry at least 150 feet of 1½-inch hose with the exception of two which carry 450 feet or three 150-foot lengths each connected directly to the outlet from the pump. The apparatus with the three 1½-inch lines locates at the scene of the fire while one of the other companies will lay out 2½-inch line into pump inlet which has in place a valve with an adapter from 4½-inch to 2½-inch.

Our department uses 1½-inch hose in the extinguishment of practically all fires. Our experience with 1½-inch hose is that it is easy to stretch into a building, in particular, to upper floors. It increases efficiency in getting at the seat of the fire and is very efficient on partition fires and redues the water damage to a minimum compared with a 2½-inch line extinguishing the same amount of fire.

G. L. Nalley, Asst. Chief, Little Rock, Ark.: We use 1½-inch hose on residence fires and before larger lines.

We find that the 1½-inch line is much lighter for the men to handle, and they can move faster. We use two 1½-inch lines wyed off the 2½-inch line, with 75 feet of 1½-inch hose in each line. One nozzle is a cut-off type nozzle with ½-inch tip. The other nozzle is a fog nozzle. Both nozzles are advanced to the seat of the fire together. We find that water damage is reduced by the use of this type layout.

J. Franklyn Dunn, Chief, Middletown, Conn.: We do not use 1½-inch hose regularly but carry 300 to 400 feet on all trucks. It is wyed off a 2½-inch line for mopping up. We do not stretch in 1½-inch hose before larger lines, but use it on small fires such as garage and shed fires.

Marvin K. Evans, Chief, Lynchburg, Va.: We use 1½-inch hose on any fire that we believe can be handled with it. It is used before larger lines and backed up with larger lines.

The chief benefits of 1½-inch hose are that it can be handled more easily by less men on ladders, stairways, etc., and that it causes about eighty per cent less water damage.

Walter L. Hydaker, Chief, Lima, Ohio: We use 1½-inch hose wherever it is possible or practical to do so. We use it at house fires and at many large fires that have been knocked down. It is ideal for one or two men to use in cleaning up after a large fire.

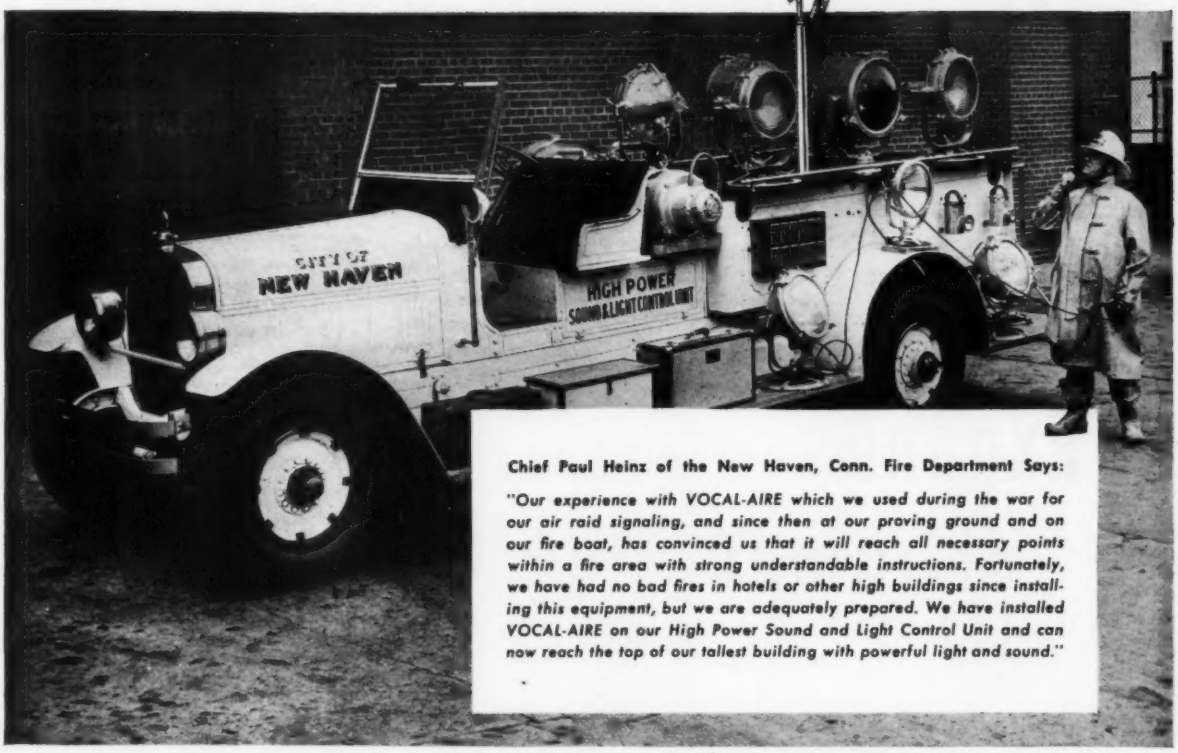
On a good many fires it is the first line in as we have our 1½-inch hooked up in similar way to the conventional booster hookup. The truck to which the 1½-inch hose is attached is backed up by another pumper laying a 2½-inch supply line to it. We find that this is a very rapid and efficient way to put 1½-inch lines in service.

We all know that 2½-inch lines have a very definite place at fires and should be in readiness at all fires where they may be needed, but 1½-inch hose will handle some big fires if it is used with some good judgment.

Stanley W. Doughty, Chief, McKeesport, Pa.: We do not use 1½-inch hose regularly, but do use it on grass fires and in special cases.

Our principle has been to use the booster hose for small fires. On

The world's LOUDEST LOUD SPEAKER



Chief Paul Heinz of the New Haven, Conn. Fire Department Says:

"Our experience with VOCAL-AIRE which we used during the war for our air raid signaling, and since then at our proving ground and on our fire boat, has convinced us that it will reach all necessary points within a fire area with strong understandable instructions. Fortunately, we have had no bad fires in hotels or other high buildings since installing this equipment, but we are adequately prepared. We have installed VOCAL-AIRE on our High Power Sound and Light Control Unit and can now reach the top of our tallest building with powerful light and sound."

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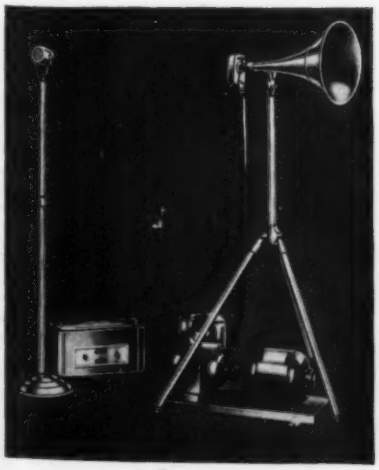
VOCAL-AIRE'S application of the power of compressed air to voice amplification pays dividends through low power requirements, simplicity, minimum maintenance, maximum coverage and distance. The exclusive VOICE VALVE requires only 20 watts power to send the voice a mile or more over the noise of traffic and working apparatus. The complete Vocal-Aire model shown, with a gas-driven compressor weighs only 280 pounds; with a compressor driven by the truck engine, VOCAL-AIRE weighs less than 50 pounds. Superior not only for talking to occupants and crews inside buildings, but also for rapid instructions to apparatus spread out around the fire area.



Write for free literature and name of nearest distributor.

Vocal Aire

DILKS, INCORPORATED

BOX 466 • **NORWALK, CONN.**

larger fires we use 2½-inch hose with all-purpose nozzles.

B. W. Groom, Second Assistant Chief, Bellingham, Wash.: One and a half-inch lines are used at all dwelling fires and fires in other occupancies that have not broken out or gained great headway.

The first line stretched is usually 1½-inch. It is stretched from one side of a 2½-inch wye. The other side is available for a 2½-inch line or a second 1½-inch.

The 1½-inch line can be stretched and operated much faster with short crews than the 2½-inch one.

J. C. McEachern, Chief, Haynesville, La.: We have been using 1½-inch hose for several years and have had great results. We lay a 2½-inch line of hose to the fire and come off this with two 1½-inch lines. If the fire is too much to handle with the 1½-inch lines, we then cut the 1½-inch line out and have the 2½-inch line ready to go into the fire. All of our nozzles have threads so that we can use 1½-inch lines when necessary.

David G. Stuart, Chief, Ventnor City, N. J.: For a number of years this department has used 1½-inch hose in this manner: A hose box with three compartments was built, each compartment to hold 350 feet of double jacket hose, all connected to a three-way wye, which is connected to a convenient 2½-inch discharge gate of the pumper. All three lines are fitted with 1½-inch hose with various size tips. In going into service a 2½-inch line was laid from the hydrant to the fire and connected to the suction of the pumper, which gave us a booster line and three 1½-inch streams.

This proved so succeessful for several years that I designed a machine which we had built. It carries 400 gallons of water with five mechanical take-up reels. Four reels are mounted on top of the tank, one for 1-inch booster line and three for 1½-inch hose. The largest reel is mounted on the rear and carries 600 feet of 2½-inch hose. This machine had now been in service for six years and in a town of homes and apartments is hard to beat for quick service.

It must be remembered, however, that equipment carrying 2½-inch hose must answer at the same time and the officer in charge on arrival at the fire must be alert enough to forget 1½-inch hose if conditions do not warrant its use.

Ralph B. Harnden, Chief, Auburn, Me.: The Auburn Fire Department uses 1½-inch hose in extinguishing operations. An order has been issued to stretch nothing larger than a 1½-inch line across the sidewalk in the residential area, unless otherwise directed. This size hose is used on fires in rural areas and in overhauling operations as well as on residential fires.

On most fires we find it unnecessary to stretch a 2½-inch line, as we are fortunate in having a 750 gallon tank truck with a 125 G.P.M. pump, which carries two 1½-inch lines and booster. This gives us two good streams to start work with immediately upon arrival. If my survey shows me that larger lines are needed, I have ample time to order them in before our 750 gallon supply is emptied. We also have a large rural area and the tank truck with its two 1½-inch lines has proved its worth many times when there was no other supply. In city fires we stretch 2½-inch line to curb, take two 1½-inch lines off a water thief. Should we need a larger line it is waiting at the curb ready for operation.

Our department has found the use of 1½-inch hose beneficial in many ways. 1. It is easily handled by one man. 2. On ladders, fire escapes, in attics and cellars, it is maneuvered

HERE IS THE QUESTION FOR THE NEXT ISSUE

1. **Where small maintenance painting jobs are to be done at a fire station, such as painting the interior of a room, is it your practice to have firemen do it themselves, or are painters hired to do the work?**
2. **If painters are hired, do you believe the results are as economical and as satisfactory as where firemen do it?**

Expands efficiency too!

Here's why: Simplicity in functional design. With a simple change of segments, only one Buckeye Expander is required to expand rings for hose sizes from ¾" to 3" inclusive. Then, by merely turning the handle in the opposite direction, segments are automatically released for safe removal of hose and coupling. Easy to work, trustworthy and durable, Buckeye expands efficiency—only *one* required.

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FIRE DEPARTMENT ACCESSORIES

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● *The Hardie Fog Gun gives one hand trigger control, readily adjusted from a hard driving stream to blended fog and spray, and to the finest atomized fog, as desired. This gun is beautifully balanced and easily handled.*

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● The Hardie high pressure pump installs readily into any truck. Old equipment is easily modernized.

● Leading manufacturers of Fog Fire Fighter trucks, equip their units with Hardie pumps and guns. Specify Hardie when you buy new equipment or convert an old unit.

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High Pressure PUMPS AND FOG GUNS for Fog Fire Fighters

HIGH PERFORMANCE . .

Users of Hale Fire Pumps demand and receive High Performance — the ability to produce adequate volume *and* adequate pressure.

Moreover, their flexibility in meeting a ***wide range of tough fire fighting conditions*** is a notable characteristic of Hale multi-service centrifugal fire pumps . . . operated in series for pressure and in parallel for volume.

For High Performance . . . standardize on Hale Fire Pumps, built in all standard capacities.

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FIRE PUMP COMPANY
Conshohocken, Pa.

into places where a 2½-inch line with its manpower could not go. 3. There is far less water damage from its use. 4. Its wallop and efficiency should not be underestimated.

James Thompson, Jr., Chief, Irvington, N. J.: Since 1938 we have loaded our No. 1 Emergency Squad with a full load of 1,000 feet of 1½-inch double jacket rubber-lined hose. This apparatus is centrally located in this city of but a 2.8 square mile area and rolls on all alarms of fire in addition to its squad response. Prior to putting 1½-inch to work in a big way there was a great deal of controversy regarding the merits of such a move. Nevertheless, friction loss tests were made and we gave it a try.

After eight years of use I can truthfully say it is here to stay and although it has its limitations and at certain fires never is laid, the records show that approximately 60 per cent of all dwelling fires have been extinguished or brought under control by this hook-up.

At overhauling activities it has been noticed that it is a lot easier to move about, after the men are spent than the 2½-inch even with a leader line attached.

I am of the opinion that the area of the city, availability of water and its pressure, the type of structures protected and the general climatic conditions should determine how far to go in using 1½-inch on the first line defense.

* * *

The following reply is in answer to a previous round table on dewatering basements after a fire

O. Morant, Chief, Brussels, Belgium: Our extinguishing methods seldom need the dewatering of basements of buildings following fires, although this happens normally in case of large fires. The Brussels Fire Department interferes only if specially called by the interested party; automatically if the presence of water is a public danger.

For this purpose a motor pump is used with a portable pump (400 gallons per minute at 30 pounds), which is always carried by this vehicle. We very often use an ejector which operates under pressure of a hydrant or a pump (jet pump).

The Paris Fire Brigade uses a very interesting deep lift pump under water pressure.

Our system appears to be satisfactory because every place is accessible by the portable pump and ejector.

With reference to claims, we have asked the Settlement Office to let us know if there will be a charge. To this, we have been informed that there will be a charge except when the presence of water becomes a public danger. The costs depend on the number of men engaged, the material required and the length of time employed.

C. M. Johnson, Chief, Knoxville, Tenn.: We use a siphon sometimes in dewatering basements after fires. If there is a great deal of water we use a pumping engine. Both methods have proven very satisfactory and have helped to hold water damage to a minimum.

We make no charge. This is just another service our department renders to the citizens.

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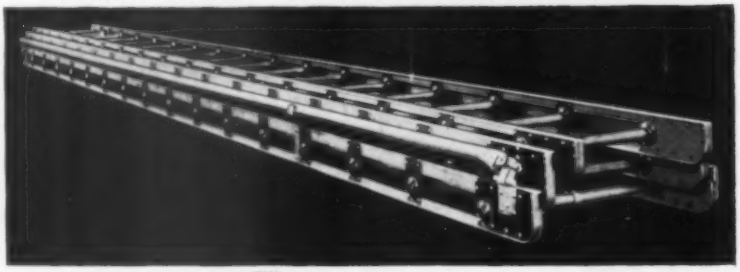
WITH EVERY **ALUMINUM LADDER**



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TOPMOST Rung
- STRONG • SAFE
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Write for information on standard and custom built Aluminum Ladders.

Combined to guarantee your safety and satisfaction are these Aluminum Ladder features:

- Locks operate automatically at any desired point during ladder extension.
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- Extension type 3EL, 65-foot ladder can easily be raised by four men and one supervisor.

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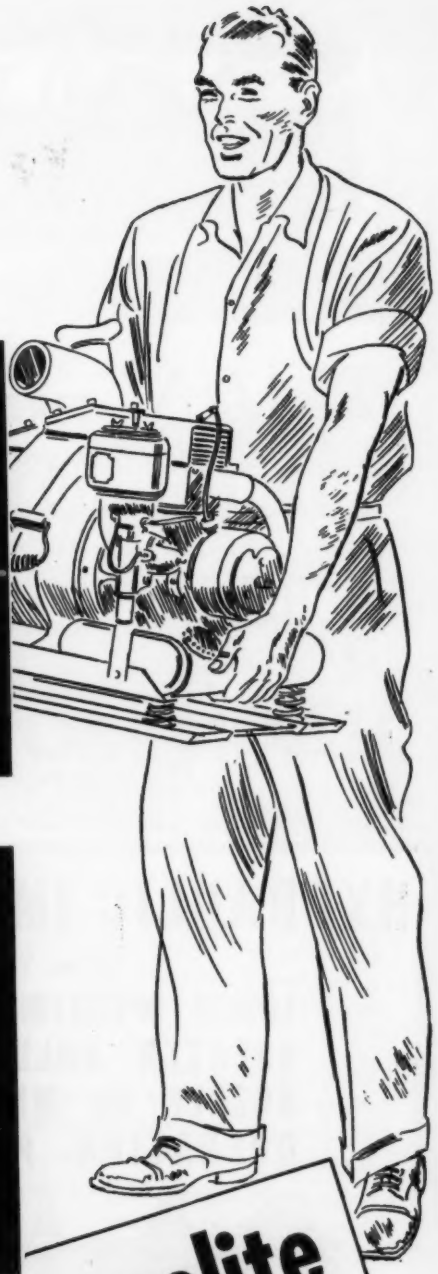
Above — Pump out flooded cellars . . . speed up your overhauling . . . with handy portable Homelite Pumps.

Below—Prevent accidents, save lives, speed work with brilliant floodlighting operated by Homelite Portable Generators.



Do you want to see these pictures come to life? Do you want to see how you, like thousands of others, can cut operation costs . . . get more work done in less time . . . with Homelite Portable Gasoline-Engine-Driven Pumps and Generators?

Then write, *now,* and ask us to have a Homelite Representative arrange to give you a free demonstration. Without obligation to you in any way, he'll show you, *right on your job,* Homelite Portable Pumps and Generators *in action.* You ask him questions. Run the units yourself. You can find out everything you want to know about their design and operation. You can see, for yourself, just what you can expect in on-the-job performance. Write today.

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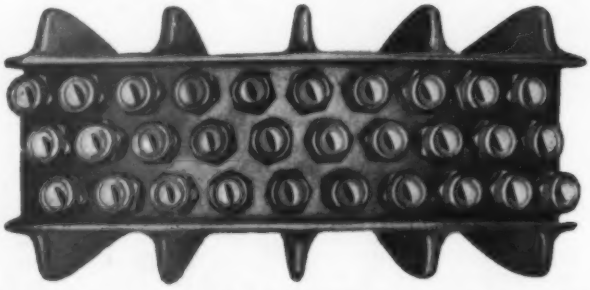
LOWER OPERATING PRESSURE, GREATER VOLUME and a NOZZLE to MEET EVERY OPERATING PRESSURE



LARGE HOLES WHICH PREVENT CLOGGING

PARADISE MFG. CO.

3165 S. PENN ST. INDIANAPOLIS 44, IND.

Manufacturers' Announcements

(*Continued from page 632*)

upon outbreak of War to serve as Assistant to the Chief of Industrial Operations, Tank-Automotive Center, Ordnance Department, Detroit. Upon completion of this service in 1943 he joined Willys-Overland as Assistant to the General Manager of the Jeep Division, with headquarters in Detroit, supervising war products sales.

"Big Beam"—New Portable Electric Hand Lamp

The new "Big Beam" No. 211 portable electric hand lamp is said to provide "an inexpensive means of putting bright light anywhere . . . any time."

It is weatherproof; has a single focus adjustment whereby it will deliver a spot or spread light—a 1,500 foot beam

"Big Beam" Hand Lamp

or bright localized light. It is powered by two standard drycell batteries with pressure type connections. It weighs, complete with batteries, approximately 5 pounds and it can be set down anywhere or clamped in a special hold-down accessory fixture for automobile trunks or prows of boats.

Big Beam No. 211 portable electric, hand lamp is made by the U-C Manufacturing Co., 11 East Hubbard Street, Chicago 11, Ill.

I. A. F. C. Conference

(*Continued from page 623*)

by Battalion Chief Emmet Byrne, Cleveland Fire Department, aided by members of the International Association of Fire Fighters. A number of fire departments, including that of Cleveland, are successfully undertaking on-the-job fire training in cooperation with Federal sponsorship, it was disclosed.

Friday morning ended the business sessions, with the presentation of resolutions; the election of officers for the coming year, determination of the city for the 1947 conference; presentation of awards and other details.

Awards Made

Two awards were made, the first a diamond Association lapel insignia to retiring President Samuel Pope, one of the few International presidents to hold office for two years, and the second, a gold badge of the Association to Chief James Keegan, Chairman of the Exhibit Committee for his many years of service in that capacity.

Chairman Peter Steinkellner of the Resolutions Committee submitted the resolutions previously adopted by his committee, all of which were approved.

By invitation from Fire Commissioner Frank Quayle and Acting Chief-in-Charge Frank Murphy of the New York Fire Department, New York City was unanimously selected as the location for the 1947 conference.

Election of Officers

The election of officers resulted in the advancement of First Vice-President Charles A. Delaney of Lakewood, Ohio, to President; Second Vice-President Frank C. McAuliffe of Chicago, Ill., to the post of First Vice-President. Chief Henry Chase of Miami, Fla., was elected Second Vice-President.

Chief Daniel B. Tierney of Arlington, Mass., was re-elected Secretary-Treasurer; Jay W. Stevens of San Francisco was retained as Executive Secretary and Fred Shepperd again elected to the position of Engineer-Manager.

Members and ladies enjoyed an extensive entertainment program. Beginning on Tuesday afternoon with a bus ride along the lake front and through the City of Cleveland for the ladies, the program included a night ball game between the Cleveland Indians and the Philadelphia Athletics (won by the local team) a fashion show at the Higbee Company Department Store of Wednesday afternoon and another of the famous Gamewell parties that evening which, this year, took the form of a moonlight boat ride aboard the S.S. Alabama. Those who did not take the boat ride were guests at a premier showing of a feature motion picture.

The Association banquet was held at the Hotel Statler on Thursday evening with approximately 1,200 in attendance.

Included in the registered 966 members and guests were members from every state and Alaska, and the Dominion of Canada.

Convention Dates

Aug. 27-30 — DOMINION ASSOCIATION OF FIRE CHIEFS. Annual meeting, Timmins, Ont. Secretary, Chief Allan H. Clarke, Lakefield, Ont.

Aug. 29-31 — CONNECTICUT STATE FIREMEN'S ASSOCIATION. Annual meeting, Torrington, Conn. Secretary, John Moehring, 56 Toms Road, Stamford, Conn.

Sept. 3-6—MARYLAND SHORT COURSE. Annual meeting, University of Maryland, College Park, Md. Director, Chief J. W. Just, Fire Service Extension, College of Engineering, University of Maryland.

Sept. 9-13 — INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS. Annual meeting, Toledo, Ohio. Secretary-Treasurer, George J. Richardson, A. F. of L. Building, Washington, D. C.

Sept. 12-14 — FIRE CHIEFS' EMERGENCY PLAN OF WESTCHESTER COUNTY TRAINING INSTITUTE. White Plains, N. Y. General Chairman, Chief Roi B. Woolley, Larchmont, N. Y.

Sept. 24-26—INDIANA STATE FIRE SCHOOL. Annual meeting, Purdue University, Lafayette, Ind. Francis Hartman, Assistant Director, Indiana Fire Service Training Schools, Purdue University, Lafayette, Ind.

Oct. 14-16—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Omaha, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb.

Oct. 15-17 — ILLINOIS FIREMEN'S ASSOCIATION. Annual meeting, Quincy, Ill. Secretary, Chief Roy Alsip, Fire Headquarters, Champaign, Ill.

Oct. 23-25—INDIANA FIRE CHIEFS ASSOCIATION. Annual meeting, Terre Haute, Ind. Secretary, Chief Archie McCabe, Muncie, Ind.

Nov. 11-14 — INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual meeting, Miami, Fla. Secretary, Irvin Shulsinger, 8 East 41st Street, New York 17, N. Y.

Announcing . . .

A NEW, POSITIVE-ACTION AUTOMATIC ALARM SYSTEM

that provides complete fire protection for homes, hotels, institutions, commercial buildings and industrial plants.

"ALERT" AUTOMATIC FIRE ALARM SYSTEMS

give **SPLIT-SECOND WARNING!**

Activated by super-sensitive **"PYROSTATS"**

React **3 TIMES** *Faster!*

"ALERT" Automatic Fire Alarm Systems make prompt fire fighting action possible—because they give instant warning if fire starts. The PYROSTATS—Alert's exclusive detector units—are so sensitive to excessive heat that they often sound a warning before a smouldering fire can burst into flame.

The PYROSTATS used in Alert Systems are made to the same standards as the thousands supplied by us to the U. S. Navy for fire control aboard warships. They are sealed in glass for life-time protection from dirt and moisture; their accurate, positive performance is guaranteed.

4-FUNCTION CONTROL—A special supervisory control circuit does 4 things: (1) Automatically and instantly sounds an alarm; (2) Automatically switches to battery operation in case of power failure; (3) Automatically signals if system is accidentally deranged. (4) Permits entire system to be tested from a single central point by means of buttons which simulate fire, overheating, accidental damage or power failure—also test battery.

FLEXIBLE IN USE—Alert Systems can be combined with annunciators and manual control stations, used with multiple alarms, or used in conjunction with sprinklers.

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Specialists in Temperature Indication, Control and Alarm

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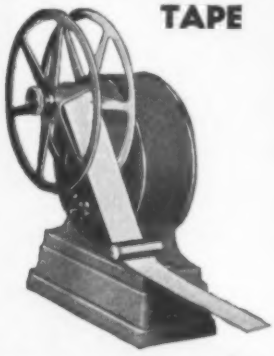
• NO MORE MESS •
WITH SPRAWLING TAPE



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Take-up Reel

Rolls up tape as it emerges from the paper tape register, making a compact roll that is easily handled and filed, doing away with the ordinary sprawling of paper over the wastebasket or on the floor.

Built with the same precision as all other Harrington equipment.

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THE WOOSTER BRASS CO.
WOOSTER, OHIO

SOME WORDS FOOL YOU
like
RAISE (to erect) RAZE (to destroy)
BUT
WOOSTER BRASS always means the BEST in fire equipment supplies.

THE WOOSTER BRASS CO.
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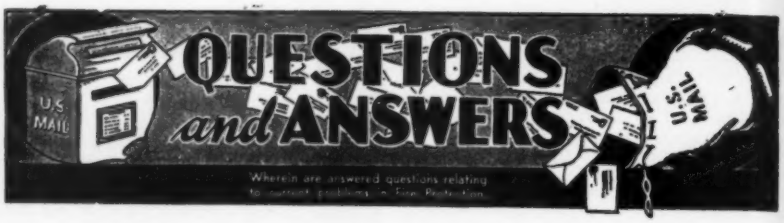
When you specify products bearing the TRUMPET trademark, you can SAVE and BANK on SAFETY.



Conversion Factor

To the Editor:

Will you quote the factor for changing four 1½-inch lines to one line of 2½-inch hose?

J. J. G.

Answer: To change four 1½-inch lines to a single 2½-inch line, the procedure is as follows:

Change each 1½-inch line to 2½-inch by dividing by the factor .074.

Change the four parallel 2½-inch lines so secured to a single 2½-inch line by dividing by the factor 12.4.

Or the operation can be performed in one step:

Divide the length of one of the parallel 1½-inch lines by (.074 x 12.4) or .9176, or .92 approximately.

This figure, .92, is thus the factor for changing four parallel lines of 1½-inch hose to a single line of 2½-inch.

The various factors for changing one size of hose to another are determined from the friction loss in the different sizes of lines for a given flow.

For example, the friction loss for a flow of 240 gallons per minute is 14.1 pounds per hundred feet for 2½-inch hose and 5.4 pounds per hundred feet for 3-inch hose.

The factor by which 2½-inch hose must be divided to find the length of 3-inch hose having the same friction loss will then be the relation of 14.1 to 5.4, or 2.6. This figure is secured by dividing 14.1 by 5.4. In other words the factor for changing hose from one size to another is merely the relationship between the friction loss of two sizes of hose for a given flow.

Discharge from an Elevation

To the Editor:

1. On our aerial ladder, we have 50 feet of 3-inch hose with 1½-inch nozzle tip. We connect two lines of 2½-inch hose from the pumper. What pump pressure will there be if we use two lines of ½-inch hose 100 feet long; also 200 feet long; 300 feet long? What is the nozzle pressure? What is the discharge?

2. On our multi-versal, using 1½-inch, 1¾-inch, 2-inch tips, what will be the pump pressure using two 2½-inch lines, three lines, four lines, etc., 100 feet from the pumper, 200 feet from the pumper, 300 feet from the pumper, etc.? What will be the nozzle pressure? What will be discharge?

L. T. W.

Answer: In the first place you do not state to what elevation the aerial ladder is extended, nor how high the nozzle is from the ground. We shall assume, therefore, that the ladder is fully extended and the nozzle is at an elevation of 85 feet.

Before solving the problem, the 3-inch line of hose must be changed to 2½-inch, and the parallel lines of 2½-inch reduced to a single line of 2½-inch.

50 feet of 3-inch hose is equivalent to 19.23 feet of 2½-inch.

Two parallel lines of 100 feet of 2½-inch hose are equivalent to 27.78 feet of single line 2½-inch hose; 200 feet, 55.56 feet single line; 300 feet, 83.33 feet single line.

Then in the three cases you cite, the total stretch of single line of hose will be in the first instance, 47.01; in the second, 74.79 and in the third, 102.56 feet.

In solving for nozzle pressure using the formula N. P. = E. P. ÷ (1.1 + KL) and using the proper factors of K, we get the following:

Where the 2½-inch parallel lines are 100 feet in length, the pressure at the nozzle will be 103 pounds, and the discharge 677 gallons per minute.

Where parallel lines of 2½-inch hose 200 feet long are used, we'll get a nozzle pressure of 88 pounds and a flow of 626 gallons per minute.

Where parallel lines 300 feet in length are used, we get a nozzle pressure of 76 pounds and a discharge of 582 gallons per minute.

In the previous calculations you may have noted that we assumed an engine pressure of 200 pounds. The engine pressure was not given, and it is not possible to calculate for nozzle pressure unless the engine pressure is stated.

In the second problem involving the use of the multi-versal nozzle, engine pressure is again omitted, so we shall assume an engine pressure of 150 pounds.

The table below gives the nozzle pressures on the different layouts as stated in the problem:

NOZZLE PRESSURES
(LBS. PER SQ. IN.)

Nozzle Diam.	2 lines	3 lines	4 lines
	(100 ft. stretch—2½-in. hose)		
1½	110	123	128
1¾	95	113	121
2	77.5	101	112
	(200-ft. stretch—2½-in. hose)		
1½	91.5	111	120
1¾	72.5	96	109
2	54	80.6	95
	(300-ft. stretch—2½-in. hose)		
1½	78.6	102	113
1¾	59	84	100
2	41.5	67	84

Solving for Friction Loss

What will be the friction loss in 100 feet of 2½-inch rubber lined hose wyed into two lines of 1½-inch hose, each 100 feet long and equipped with 5/8-inch tip and a nozzle pressure of 45 pounds? This 1½-inch hose is to be used directly from the pump.

O. A. D.

Answer: The layout consists of 100 feet of 2½-inch hose wyed into two parallel 100-foot lines of 1½-inch hose, each

equipped with 5/8-inch nozzle, and with a pressure of 45 pounds per square inch at each nozzle.

The discharge from each nozzle will be 77.7 gallons per minute.

The total flow from the two will be 155.4 gallons per minute.

The friction loss in 100 feet of 1½-inch hose carrying 77.7 gallons per minute is 20.85, or 21 pounds approximately.

The total flow from the two nozzles will be the flow through the 100-foot line of 2½-inch hose, or 155.4 gallons per minute.

The friction loss per 100 feet of 2½-inch hose carrying 155.4 gallons per minute will be:

$$2 \times Q \times Q + Q$$
$$= 2 \times 1.554 \times 1.554 + 1.554.$$
$$= 6.3838, \text{ or } 6.4 \text{ pounds approximately.}$$

If the 2½-inch line were longer, the friction loss in each 100 feet would still be the same as long as the nozzle pressures on the 5/8-inch tips remain the same.

If a single line of 1½-inch hose, equipped with a 5/8-inch tip, were stretched from a pumper, and the nozzle pressure was 45 pounds, the discharge would be the same as the first part of this problem, namely, 77.7 gallons per minute.

And the friction loss per 100 feet of 1½-inch hose would be, as in the first case, 20.85, or 21 pounds approximately.

Lifting Water by Suction

To the Editor:

During a discussion on pumps the other day the following problem arose:

We assume a 500 gallon per minute pump will expel 500 gallons per minute or capacity on a 10-foot lift from draft. How much water will we get at 20 feet with a 500 G. P. M. pump and a 4-inch suction? Does a centrifugal or rotary pump make any difference?

Will you explain why we can, or cannot, get capacity at 20 feet? Our city is only 100 feet above sea level.

A. G. H.

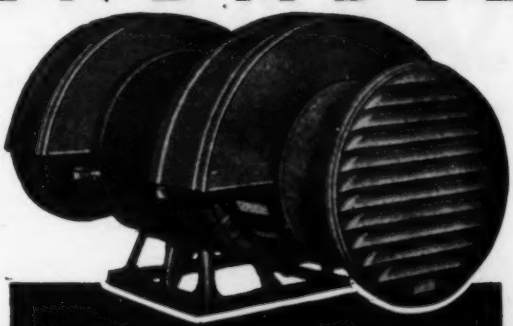
Answer: The National Board of Fire Underwriters in "Fire Engine Tests and Fire Stream Tables" states that at a lift of 20 feet, using 4-inch suction, only 400 gallons per minute can be raised by the average pumper. The reason for this is the fact that the static head plus the friction in the suction hose produces a negative head (vacuum) beyond the capability of most pumpers to maintain.

A pumper in good condition is expected to raise its capacity at not more than 25 feet.

The type of pump would make little difference, once the pump was discharging water. Of course, where a centrifugal pump is used, and a positive displacement type of priming device is employed, it is a little slower to raise water by suction than where a rotary pump or piston pump is employed. However, once the water is being discharged from the pump, they all have equal ability to maintain vacuum on the intake.

Incidentally, if 4½-inch suction is employed, the pump should be able to lift

DEPENDABLE



STERLING MODEL "M"
GENERAL ALARM SIREN
You Can Depend On It ALWAYS

in Silver or in *SIRENS—*

STERLING
A NAME YOU CAN DEPEND ON

An absolutely dependable, tried and proven siren for communities of all sizes. Loud, clear, simple to install and no maintenance to bother with. Embodying the "know how" of the oldest and largest makers of siren signals in the fire field. Write for descriptive literature and list of towns using the model "M."

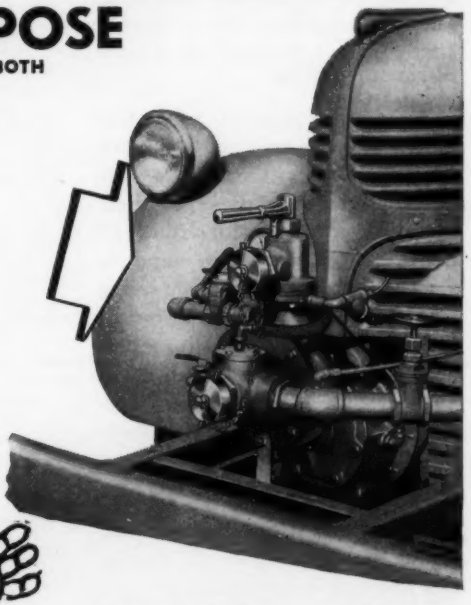
ALSO . . . MANUFACTURERS OF A COMPLETE LINE OF APPARATUS SIRENS

STERLING SIREN FIRE ALARM CO., Inc.
55 Allen Street Rochester, New York

DUAL PURPOSE
HERE'S THE PUMP THAT GIVES BOTH
1 INCH SOLID STREAM
AND
FOG

IT'S 5 WAYS BETTER

Barton-American's Gear Driven Front Mounted Centrifugal Fire Pump can be installed in a few hours' time.



A Bear for Work

Delivers 60-90 GPM at 600 lbs. pressure with FOG nozzle and 200 GPM through 2½" line with 1" SOLID STREAM nozzle . . . at engine speeds equal to only 40 mph. Front mounted construction leaves room for 1000 feet of 2½" hose plus 500 gallon booster tank. Pumps dirty water with minimum loss of efficiency.

AMERICAN-MARSH
PUMPS, INCORPORATED
BATTLE CREEK, MICHIGAN

THE NEW
SAW-GUN
SHOULD BE STANDARD
ON ALL
FIRE-FIGHTING EQUIPMENT

Here's Why..!

The Saw-Gun is a portable power-saw that will quickly cut into all metals, wood and other materials. Quickly attaches to any electric or air drill, and may also be propelled by a flexible shaft. Insert ordinary hack-saw blade for cutting.

Firemen equipped with this handy tool can now get at the fire quickly. Can cut openings into obstructions regardless of their material. Cuts rapidly through heavy gauge steel. No need to waste precious time removing steel gratings . . . cut them out of the way with this amazing portable tool. Does away with slow, cumbersome, dangerous gas cutting torches, together with their long lines of hose and heavy tanks.

Progressive fire-chiefs who know the importance of getting at a fire *fast*—who want a quicker means of getting to entrapped persons, will add the Saw-Gun as standard equipment.

SEE YOUR JOBBER or WRITE DIRECT
W. H. HOWLAND
2533 E. 73rd Street, Chicago 49, Ill.

500 gallons per minute at 20½ feet; if a 5-inch suction is employed, the pump should be able to lift 600 gallons per minute 21 feet by suction.

Echoes of the War

By Roi B. Woolley

Hot Off the News Ticker

When the heat from display lights on the steel pier at Atlantic City set off the pier's sprinkler system, the Army's biggest radio relay set and a number of weather observatory instruments were said to have been damaged. They were part of the U. S. Army exhibit which opened June 29. . . . Fire, starting in an inn destroyed 400 dwellings at Iida, in Nagano Prefecture, Japan, July 16. . . . In Denver, Colo., Robert Hamilton, former Navy pilot, made an emergency landing on a north side street on a Sunday, when the engine of his plane went dead. He and a companion escaped injury, but there were plenty of scared citizens. The fire department was called, found little to do. . . . In Chicago, a big TWA airliner, carrying 18 passengers and three crew members, retracted its wheels, when its engines died over a south side residential area, July 2, and the pilot skidded the craft to a landing on the Belt Line Railroad tracks, causing damage which tied up rail traffic for several hours. Here, too, firemen fortunately found no fire, no fatalities. . . . In New York, four youths who wanted to make their own firecrackers, and were full of "war spirit" were arrested for possession of 24 sticks of dynamite, identified as having been stolen from a construction project in Yonkers, N. Y. . . . In Allentown, Pa., theft of "enough dynamite to make a sizeable blast" was reported by Police Chief Wayne Elliott who said thieves had ripped doors from storage buildings, obtaining two 50-pound cases of stock dynamite, four 100-pound cases of explosive "speed" gelatine and three cases of dynamite caps. Nice sort of stowage to have hanging around, eh? . . . Speaking of explosives, a real scare was provided in New York by a crate eighteen inches square which floated ashore on the beach at Richmond, Staten Island. It contained what looked like a bomb, and brought the city's bomb squad, who found it to be a circulating pump for a 50-cal. machine gun, evidently lost off the destroyed escort Solar which sank following an explosion in New Jersey. . . . According to Representative Hugh DeLacy of Washington, the military authorities of this country had 1,500 atomic bombs stored away and were making more as far back March of this year. . . . According to Dr. Isadore Rabi, executive officer of the department of physics at Columbia University, thirty atomic bombs would wipe out the entire city of New York and a large section of its population. . . . Carbon dioxide fumes escaping while ten men were working in a compartment below the fourth deck of the Carrier Franklin at the New York Naval Shipyard, Brooklyn, N. Y., caused the death of two and overcame the eight others. The men were transferring the gas, used for fire-fighting aboard ship, into metal cylinders, it is said, when it began leaking in some unexplained way. . . . The Army reported that studies in progress at

CIRCUL-AIR
FIRE HOSE DRYER

- Is easier to use
- Saves drying time
- Reduces hose stretch
- Prevents mildew and rot
- Improves building design
- Air-conditions as it dries

THE CIRCUL-AIR CORPORATION
575 East Milwaukee Street
DETROIT 2 MICHIGAN

BRAXMAR
BADGES

Standard with firemen for 67 years. We can now supply nickel and chrome badges.

John O. Veit, Pres.

C. G. BRAXMAR CO., Inc.
242 W. 55 Street, New York 19, N. Y.

Aberdeen, Md., Proving Ground indicate 200-foot-deep caverns, or air raid shelters of equal depth, are proving dubious protection. Colonel Leslie Simon, director of the Aberdeen Laboratory said that after results of the Bikini tests are compiled "we can determine at what height an atom bomb should be exploded to crush solid rock to a depth of 150 to 200 feet." Before this it had been believed that deep underground installations would be an effective shelter against an atomic explosion. . . . David Dietz, writing in the N. Y. World-Telegram says that the center of the "miniature sun" (the explosion that broke over Bikini Atol) would have a temperature that is five times hotter than scientists believe the center of our own sun to be—or about 100,000,000 degrees! . . . When a big Jap four-engined bomber, the only one of its kind in existence, took off from the Newark, N. J., airport this spring, three fire trucks and lots of firemen and crash crewmen were right on hand as a precaution. No fires, no risks, no terrors.

Dallas Hotel Blast Kills Eight

The nation's third major hotel tragedy in a month killed nine persons and injured thirty-eight when an explosion blasted the sub-basement and basement of the 700-room Baker Hotel in downtown Dallas, Texas, June 22.

The explosion, attributed to ignition of an explosive gas pocket between the top of the refrigerating rooms in the sub-basement and the ceiling of the basement of the 18-story steel, concrete and masonry structure, occurred shortly before noon as workmen were installing new refrigeration equipment. At this writing the nature of the gas had not been determined but Fire Marshal B. C. Hilton said apparently the explosive mixture was ignited by an electric arc, a flame or smoldering material. Meanwhile investigations are being conducted by Fire Chief C. N. Penn of Dallas; Explosion Expert George M. Kintz of the U. S. Bureau of Mines; E. L. Mitchell, representative of the National Board of Fire Underwriters, and other authorities.

No guests of the hotel were killed, the victims being hotel employes or outside workmen. The detonation was felt throughout the entire hotel and in nearby structures. Immediately following the blast, ammonia fumes permeated the lower sections of the building, felling many persons before they could escape to the outer air.

Firemen, quickly summoned, immediately donned gas masks and began the removal of victims. Nearly all the ambulances in the city were dispatched to the scene, as emergency services brought out the casualties, and efforts were made to revive the most seriously injured. Special calls for resuscitators and breathing equipment brought a heavy concentration of fire, police, medical and utility services.

Canadian Fire Losses Up

W. L. Clairmont, Canadian Fire Commissioner, reports that fire losses in the Dominion in 1945 were $41,930,020, compared with $40,562,478 in 1944, and that in 1945 "in addition, losses to the extent of $9,867,000 in national defense and other crown properties," which would give a total of $51,770,000.

Using only clear water and portable on the back, INDIAN FIRE PUMPS have won the high esteem of firemen all over the U. S. They are the fastest, most economical way to put out over 70% of all your calls... either inside or outdoor fires.

Yes, sir, in an INDIAN FIRE PUMP you really have the all-'round fire fighter that saves time and money. How is your supply? Now is the time to order. Let us send our catalog and copies of testimonials from fire departments all over the country. Write us today!

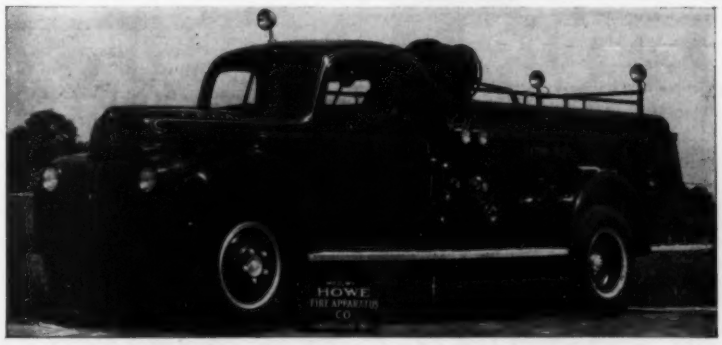
D. B. SMITH & CO. 406 Main Street Utica, N. Y.

PACIFIC COAST AGENTS

HERCULES EQUIPMENT & RUBBER CO.
435 Brannan St., San Francisco, Cal.
MILL & MINE SUPPLY CO.
2700 4th Ave. So., Seattle, Wash.
FRED E. BARNETT CO.
2005 S.E. 8th Ave., Portland, Oregon
FRED E. BARNETT CO.
600 Spring St., Klamath Falls, Ore.
FRED E. BARNETT CO.
Broadway & Harris St., Eureka, Cal.
ROY G. DAVIS CO.
617 E. 3rd St., Los Angeles, Cal.

CANADIAN AGENTS

BINGHAM & HOBBS EQUIP. CO., LTD
395 W. 5th Ave., Vancouver, B. C.
DUKE EQUIPMENT CO.
297 Duke St., Montreal



HOWE Can Supply Any Body Style Desired.

HOWE FIRE APPARATUS CO. Established 1872 1402 West 22nd Street Anderson, Indiana

HYDRANTS, VALVES
and Pipe Line Accessories

Installing 30-inch M&H Valve in Cast Iron Pipe Supply Line

VALVES: A. W. W. A. types, iron body, bronze mounted with double-disc parallel seat or solid wedge type. Non-rising stem, outside screw and yoke; or, with sliding stem and lever. Also furnished hydraulically operated. Square Bottom type operates in any position. All are rugged and dependable, made of best material with highest quality workmanship.

A. W. W. A. HYDRANTS
Underwriters Approved

SPECIAL TRAFFIC MODEL (shown at right) is designed to yield at ground line under impact, repair being simply renewal of breakable bolts and breakable coupling on stem. Dry top, revolving head, easy to lubricate. High efficiency because barrel diameter not reduced and there are no working parts or obstructions in waterway.

Conform to American Water Works Association specifications. Approved and listed by Underwriters' Laboratories and Associated Factory Mutuals. Well known and widely used for many years.

M&H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

Classified Advertisements

Rates are inexpensive. "For Sale," "Proposal" and "Wanted" advertising, $5 per inch insertion (10% discount allowed for three or more consecutive insertions). FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

WANTED

Fire Equipment Dealers to sell Morning Pride protected rubber firecoats, fire pants, fire mitts and fire suspenders.
Write today Morning Pride Mfg. Co., 1986 Home Ave., Dayton 7, Ohio.

CHIMNEY POWDER

No need to send men on the roof for chimney fires. Has-Mor Soot Destroyer not only puts the fire out, it continues to work until it cleans the chimney, making it unnecessary to go back to another chimney fire. Put up in handy packages. Agents wanted. Harry S. Morgan, 52 Broad St., Johnson City, N. Y.

FOR SALE

Double end, 3 Phase, 5 Horsepower used Siren. Magnetic Switch and push button box. Riviera Beach Vol. Fire Co., Inc., Pasadena, P. O., Maryland.

FOR SALE

At tremendous savings. Practically new, nozzles, Y-gates, adapters, asbestos suits, boots, axes, etc., all equipment manufactured for U. S. Govt. Send me list of your needs, or write for sample lists. Irwin Heim, 146-09 14th Ave., Whitestone, N. Y. FLushing 3-4081.

APPARATUS FOR SALE

Dodge Truck 1936 with 500-gallon centrifugal pump and 200-gallon booster tank. For further information write Abington Fire Co., Abington, Penna.

FOR SALE

1 Hale Type 5 Pumper, 2 wheel booster brakes, dual pneumatic tires, 600 G.P.M. rotary pump, 100 Gal. Water tank with one ¾" hose line, 1,000 2½" hose body capacity. In good condition. Price $1,800. Edge Hill Fire Company, No. 1, Abington Township District No. 4, North Hills, Pa.

FOR SALE

1 Hale Type 4 Apparatus, 2 wheel booster brakes, dual pneumatic tires, 100 G.P.M. rotary pump, 135 gal. water tank with two ¾" hose lines in basket, 200 ft 1½" hose body capacity, 800 ft 2½" hose body capacity. In good condition. Price $1,200. Edge Hill Fire Company, No. 1, Abington Township District, No. 4, North Hills, Pa.

WANTED—STATE DISTRIBUTORS

To handle new and revolutionary fire rescue equipment. Financially responsible men only. Evacuator Corporation of America, 922 Book Building, Detroit 26, Michigan.

FOR SALE

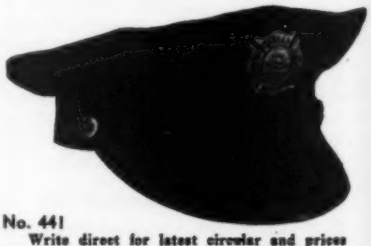
All manufacturing rights, patterns and some electric motor stock of one of the oldest and best known fire sirens for cities and towns. Box 35, c/o FIRE ENGINEERING, 24 West 40th St., New York 18, N. Y.

keep
WATER
DAMAGE
DOWN
Use
Shuredry
GREEN-BAK
• SALVAGE COVERS •
Pour on the water — merchandise covered with Shuredry is protected. Flexible, easy-to-handle Shuredry Green-bak Salvage Covers are water-proofed by the exclusive Fulton dry treatment—always soft and pliant even in zero weather. No cracking or sweating when folded for storage.
Tested and passed by the National Board of Fire Underwriters and by Factory Mutuals Fire Insurance Association.
Set a new record for low fire losses. Order Shuredry Green-bak Salvage Covers now from the factory nearest you. Immediate shipment.
FULTON BAG & COTTON MILLS
Manufacturers since 1870
Atlanta St. Louis Dallas Minneapolis Denver
New York New Orleans Kansas City, Kans.

WENTWORTH
FIREMAN'S UNIFORM CAPS
Union Made **Prompt Delivery**

No. 342

Wentworth Fireman Caps are made of the Highest Quality Standard Materials available and by the Best Skilled Union Craftsmen in all the New and Standard styles. Our 50 years of experience and skilled workmen guarantee you AMERICA'S GREATEST CAP VALUE in all WENTWORTH FIREMAN CAPS.



No. 441

Write direct for latest circular and prices or see your local dealer.

WENTWORTH-FORMAN CO., INC.
21-23 Edinboro St., Boston 11, Mass.
Manufacturers
Fireman Cap Specialists for Over 50 Years

Classified Advertisements

FOR SALE

Regulation ¾ felt lined, firemen's boots, sizes 6 to 12, $9.65 pair prepaid. (New Stock Black Only).
Doray Fire Equipment Co., 1924 Valley Drive, Syracuse 7, N. Y.

FOR SALE

Reipling Universal nozzles, 1" chromed, $17.00, 1½" chromed, $42.50, immediate shipment, standard threads. 2½" available about 30 days, $77.50 in chrome.
Doray Fire Equipment Co., 1924 Valley Drive, Syracuse 7, N. Y.

POSITION WANTED

Engineer—M.E.—Fire Protection—20 years' experience design, specifications, tests, water supply, sprinklers, inspections, reports, losses, fire department organization and training. Able to take complete charge of comprehensive program as chief engineer or chief inspector. Write Box 25, c/o FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

POSITION WANTED

As fire chief or fire and safety supervisor in an industrial plant. Eighteen years' experience in fire protection. Five years as fire chief in a large munitions works. Graduate of engineering college large state university. Experience in fire organizational work and training procedures. Excellent references. Address: Box 50, c/o FIRE ENGINEERING, 24 West 40th St., New York 18, N. Y.

POSITION WANTED

With plant fire department by ex-G.I. firefighter. Was regular member of Stateside post fire department, and unit fire N.C.O. overseas. Age 34, married. First class character and efficiency references. Box 40, c/o FIRE ENGINEERING, 24 West 40th St., New York 18, N. Y.

POSITION WANTED

As a fire chief in vicinity of Los Angeles, California. Over 20 years experience as a fire chief in a first class city. Served in the same capacity in the United States Armed Forces throughout World War II. Municipality or Industrial. Excellent record. Box 45, c/o FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

POSITION WANTED

Fire Training College Graduate and Instructor with 15 years fire engineering and safety experience (5 yrs. with navy department) desires position with large shipping or industrial firm. Thoroughly familiar with industrial and shipping fire prevention and fire fighting. Has complete knowledge of all types of maritime fire fighting equipment, including British. Honorably discharged veteran. Write Box 60, c/o FIRE ENGINEERING, 24 West 40th St., New York 18, N. Y.

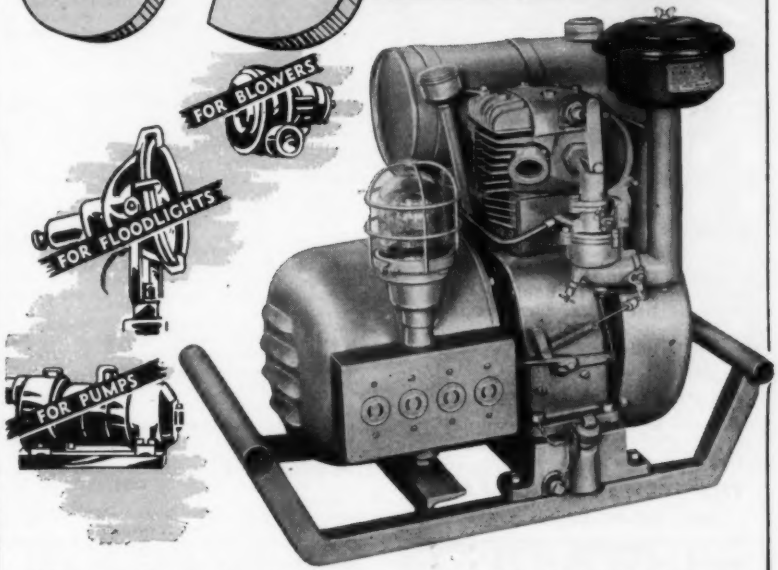
POSITION WANTED

Fire Prevention, Protection, Safety Engineer. Over 20 years' experience, including city fire department organization, training and administration. Also industrial and late army installations as supervising officer over a covered area of twenty million square feet. Capable of taking complete charge. Write Box 55, c/o FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

WANTED

Old photos of horse and tractor drawn fire apparatus, alone and working at fires.
Latest photos (or recent) of fire apparatus, alone and working at fires.
Back issues of "Fire and Water Engineering" and "Fireman's Herald." 1900 to 1915, inclusive.
Also one pair of Fire Trumpets. B. J. Stevens, 164 Seaview Ave., Jersey City 5, N. J.

"US" ELECTRICITY WHEN You want it WHERE You want it



Built to exacting requirements—to fire department specifications. . . . Designed to stand up under the hard usage and difficult conditions a Fire Department Portable has to meet! In service with leading fire departments, these rugged 1500 watt Units have *proved* themselves capable of meeting every emergency.

Dependable. Quick-starting 4-cycle engine. Positive lubrication.

Start it and forget it! Automatic voltage regulation under all loads. No adjusting necessary. No fussing to mix gasoline and oil.

Compact. An easy load for two men.

Larger and smaller sizes available. Write for further information.

UNITED STATES MOTORS CORPORATION

430 Nebraska Street **Oshkosh, Wisconsin**

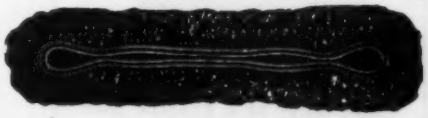
Distributed by:

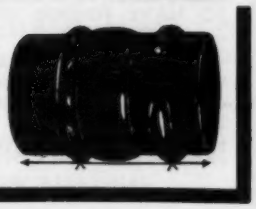
Alan Painton	Hanover, Massachusetts
Smith-Meeker Engineering Co.	125 Barclay St., N. Y. C. 7
D. S. Bachman	Durham, Pennsylvania
C. A. McDade Co.	6326 Hamilton Ave., Pittsburgh 6, Pa.
U. S. Electric Plants	Box 2032, Sta. V, Los Angeles 3, Cal.
Atlas Engine Co.	Houston, Texas; Salmon Bay Terminal, Seattle 99, Wash.
Loggers & Contractors Mach. Co.	240 S. Clay St., Portland, Ore.
Clark Supply Company	245 E. Keefe Ave., Milwaukee 12, Wis.
William F. Surgi, Inc.	1017 Magazine St., New Orleans, La.
Parker Company	1520 Wazee St., Denver, Colorado
Southwest Equipment Company	705 Ross Ave., Dallas, Texas

ARMY (E) NAVY

DOUBLE SERVICE *with* BI-LATERAL

This is the most pliable hose on the market. BI-LATERAL improved construction will give twice the service over hose made the old way. The BI-LATERAL construction makes it possible to carry 25% more hose on an apparatus — BI-LATERAL hose flattens without injury to rubber lining. BI-LATERAL comes equipped with improved ROCKER RING forged couplings.





Here's the new DROP - FORGED rocker lug coupling (not cast bronze) with the swivel protecting feature.

BI-LATERAL FIRE HOSE CO.
20 No. Wacker Drive, Chicago, Ill.

Fyr-Fyter equipment has proven its value in preventing small fires from becoming disastrous through the loss of life and property. Recent catastrophic fires with terrific loss of life emphasize the urgent need of fire protection. A complete line of Underwriters' Laboratories labeled Fire Extinguishers.

HELP SAVE LIVES AND PROPERTY

Get Fyr-Fyters for safety's sake. We advise and serve manufacturing plants, public institutions, homes, garages, trucks, autos, etc., immediately. Write us today regarding Fyr-Fyter equipment for your own protection.

THE FYR-FYTER COMPANY
Dept. 101-19, Dayton 1, Ohio

BUY BONDS! **Fyr-Fyter**

JANESVILLE QUALITY TURN OUT CLOTHING

Our turnout suits are giving excellent satisfaction in most of the large fire departments throughout the U. S. and

THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY

NOW AVAILABLE

We can now supply old type ¾ Length and Knee Length Felt-lined Firemen's Boots.

JANESVILLE APPAREL CO.
JANESVILLE, WIS.

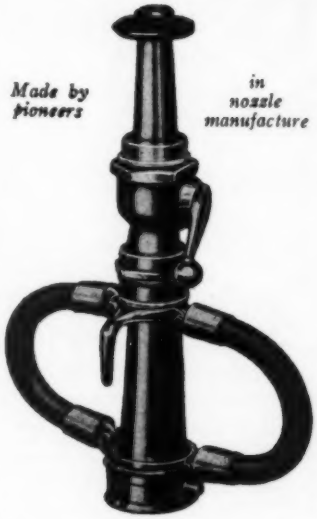
What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada, for the month of July, 1946.

Month Ending July 31, 1946

Eugene, Ore.—University of Oregon damaged.
Fredericton, N. B.—Nine bldgs., including general store, three dwellings, three barns, Keswick, destroyed.
Fort Smith, Ark.—Plant of Fort Smith Rim & Bow Co. destroyed.
Glen Falls, N. Y.—Fire raged out of control in the four-story Fitzgerald's Hotel threatening the southeastern business district of the city.
Huntertown, Ind.—Huntertown Grain & Lumber Co.'s elevator destroyed. Short circuit in machinery.
Franklin, Pa.—First Presbyterian Church and chapel destroyed.
Langley, S. C.—Old mill section of the Langley Mfg. Co. housing the engraving plt. and storage units and two large whses. in which millions of yards of cloth reportedly were stored, destroyed by fire.
Glendale, Cal.—Oakmont Country Club totally destroyed. Fire started in woman's locker room.
Marianna, Fla.—Campbellton High School, northwest of here, destroyed. Lightning.
Springfield, Ill.—Davis Cleaning Co. plt. destroyed. Spontaneous ignition.
Franklinville, N. Y.—Whse., occupied by Breyer Ice Cream Co. and James Gray Milling Co., destroyed.
Lockport, N. Y.—Olson bldg., occupied by W. T. Grant Co., Singer's Cut Rate Drug Store and others, damaged.
Tonawanda, N. Y.—Barn, two silos, two garages and other bldgs. on farm of Louis Hird, destroyed.
Medford, Ore.—Lumber plts. and mill works of American Fruit Growers, destroyed.
Quanah, Tex.—Mill, elevator and 25,000 bushels of wheat destroyed.
Marie, Ont.—Village of Desbarats destroyed.
Los Angeles, Cal.—American Pottery Co. mfg. plt, totally destroyed.
Sherbrooke, Que.—Six dwellings, two stores, convent garage and service station, Kateville, destroyed.
Juneau, Alaka—Alaska Dock & Storage Co. and apartment bldg. destroyed. Oil burner explosion.
New Plymouth, Ida.—New Plymouth theatre destroyed.
Hamtramck, Mich.—Business bldg. destroyed.
Los Angeles, Cal.—Dwellings of Jules Zimmerman, G. B. Guston, Rosemary DeCamp, Charles Meyers and adj. garage, destroyed. Plane of Howard Hughes crashed into bldgs.
Providence, R. I.—Cleinman & Sons jewelry plt. destroyed.
Wendover, Utah—Wendover Army Air Field, extreme western part, destroyed.
Woodriver, Ill.—Famous Dept. Store destroyed.
Longview, Wash.—Western Gas Co. plt. and Ecco frozen food bldg. destroyed. Gas leak.
Dinuba, Cal.—Vineyards Co. plt. destroyed.
Lancaster, N. H.—Schurman Motor Co. garage destroyed.
Eugene, Ore.—Morgan Lumber Co. destroyed. Sparks slab fire.
Kingston, Pa.—Killian Roller Skating rink destroyed. Lightning.
Marcus Hook, Pa.—Barge at Sun Oil Co. dock, Delaware River, destroyed.
Lebanon, Tenn.—Five whses. of Barry Carter Milling Co. destroyed.
Memphis, Tenn.—Attic & Window Fan Co. damaged. Short circuit.
Los Angeles, Cal.—Los Angeles Chemical Co. plt., South Gate, damaged. Explosion of cleaning solvents.
Ripon, Cal.—Schenley Coronet distillery damaged. Still explosion.
San Francisco, Cal.—Pipe shop at Hunter's Point Naval drydock base destroyed.
Portland, Ind.—Cline-Witt Lumber Mill destroyed.
Pictou, N. S.—Dock Area (including two Dominion Government sheds, repair jetty, consumer Pier "D," new pier "E," four ships, motor launch, oil tanker, cannery, ten cars of lumber and about five freight cars damaged.
Detroit, Mich.—Cruiser Dickie-Joe, two other private cruisers, Fisher Boat Works, Detroit River, destroyed. Five addl. boats damaged.
Fort Worth, Tex.—International Harvester Co. plt. damaged.
Quesnel, B. C.—Sawmill of H. J. Gardner & Sons, Bouchie Lake, six miles away, destroyed.
Los Angeles, Cal.—Arden Farms Ice Cream Mfg. Plt. damage. Sparks ignited fuel oil in refrigeration compressor room.

"All American Choice"



INVINCIBLE NOZZLES

F. N. McINTIRE BRASS WORKS
Successors to A. J. Morse & Son, Inc.
BOSTON, MASS.
1837 — 1945

BODY-GUARD BUNKER SUITS
FOR COMFORT & PROTECTION

WE ARE DISTRIBUTORS FOR
SIREN BOOTS

We have been supplying **FIREMEN'S CLOTHING** for over 25 years.

Any fireman can have a catalog by writing—

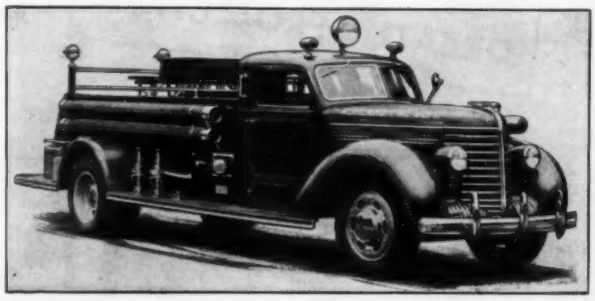
BODY-GUARD MANUFACTURING CO.
ST. JOSEPH MISSOURI

Pendleton, Ind.—Dairy barn at Indiana State Reformatory destroyed.
Rockland, Me.—Rockland Coast Guard Base destroyed.
Boston, Mass.—Escort carriers USS Manila Bay and USS Marcus Island at South Boston Navy Drydock, damaged.
Penn Yann, N. Y.—Keuka Mills, Keuka Outlet, 1½ miles east, destroyed.
Ypsilanti, Mich.—Plant of Universal Die Casting & Mfg. Co. damaged.
Mount Vernon, Ohio—Curtis Hotel in center of business district damaged.
Port Carling, Ont.—Ferndale House, Comma Centre of Canadian Keswick Bible Conference, destroyed.
Boslyn Station, Pa.—Storage bldg, at former fabricating plt, of Bethlehem Steel Corp., destroyed.
Easton, Pa.—Main bldg. of Vince Force & Mfg. Co. damaged.
Scranton, Pa.—Diocesan Bldg., a business block, damaged.
Moncton, N. B.—Hennery of Marks Bros., River Glade, destroyed.
Big Bear, Cal.—Whse., repair shop, dwelling and 4,000-gallon butane gas tank of Jack Betterlys; two cabins, two automobiles and two butane delivery trucks of Roy Hoover destroyed. Leaking valve caused gas in tank to explode.
Toronto, Ont.—Barns and contents on farm of W. E. Phillips.
Salem, Mass.—Penny Arcade destroyed; boathouse, restaurant and excursion launch at Canobie Lake Park damaged.
Eugene, Ore.—Cloverleaf Dairy destroyed.
McMinnville, Ore.—Rand truck line terminal damaged. Northwest Poultry & Dairy Products turkey processing plt. damaged.
Springbrook, Ore.—Springbrook prune packing plt. destroyed.
Woonsocket, R. I.—Garage, owned by Omer Lussier, destroyed.
Georgetown, Wash.—Paint whse. and several box cars of shingles destroyed.
Port Arthur, Tex.—Fire gutted the Inman Chevrolet Co. Eleven new automobiles and several other cars were badly damaged as flames swept the two-story brick bldg.
Lincoln, Cal.—Lincoln Packing Co. plt. destroyed.
Hawthorne, N. J.—Eastern Paint & Varnish Works damaged. Lightning.
Elizabeth City, N. C.—Kramer Bldg. destroyed.
Central Point, Ore.—Mount Pitt Lumber Co. destroyed.
Arlington, Tex.—Palace Hotel, City Cafe, McKnights Cleaners destroyed.
East Providence, R. I.—Tire retreading plt. owned by J. Henry Devaney, destroyed.
Dallas, Tex.—First Baptist Church destroyed. Lightning.
Los Angeles, Cal.—Iron Works Shop and rear of hotel, damaged.
St. Mary's, Ohio — Whse. of Auglaize, Box Board Co. and 3,000 tons of baled waste paper damaged.
Kensington, Pa.—Two bldgs. occupied by A-1 Equip. Co. damaged.
Spokane, Wash.—Paul Oettel Match Block Co. damaged. Truck backfire.
Ashland, Wis.—Main bldg. and two other units of Scott-Taylor Woodenware Co. plt. with contents, destroyed.
Bridgeport, Conn.—Pequonnack dock, damaged.
Ritzville, Wash.—Two large grain elevators and whse. destroyed.
Little Rock, Ark.—Plt. of Acme-Arkansas Lumber & Mfg. Co. destroyed, including planing mill boiler house and lumber stocks.
Lemoore, Cal.—Hanford Milling Co. destroyed.
San Quentin, Cal.—Prison jute whse. and contents damaged.
Ypsilanti, Mich.—Universal Die Casting & Mfg. Co. destroyed.
Lancaster, Pa.—YMCA, downtown, damaged.
Sinking Springs, Pa.—Flour and feed mill owned by F. M. Brown's Sons damaged.
Houston, Tex. — Ransnick Prefabricated Co. damaged.

Canadian Fire Marshals Elect

At the annual meeting of the Association of Canadian Fire Marshals, held in St. Catherines, Ontario, May 28-31, Fire Marshal H. M. Armstrong of New Brunswick was elected President and deputy Fire Marshal J. E. Ritchie of Ontario was elected vice-president. Mr. A. H. S. Stead of Montreal was elected President of the Dominion Fire Prevention Assn. He was also awarded the M. B. E. in the recent Dominion Honors List. Mr. W. L. Clairmont, Dominion Fire Commissioner, was re-elected Secretary-Treasurer of both organizations.

Champion Fire Apparatus



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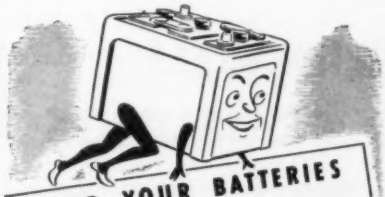

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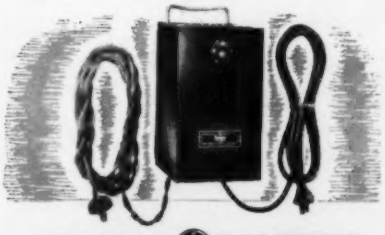

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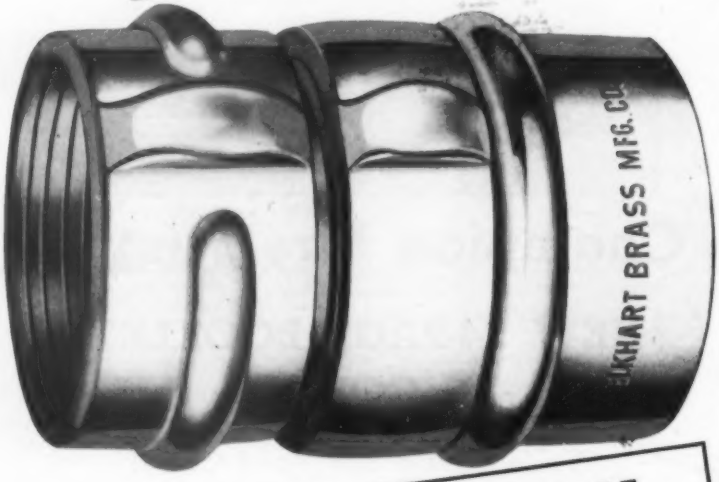

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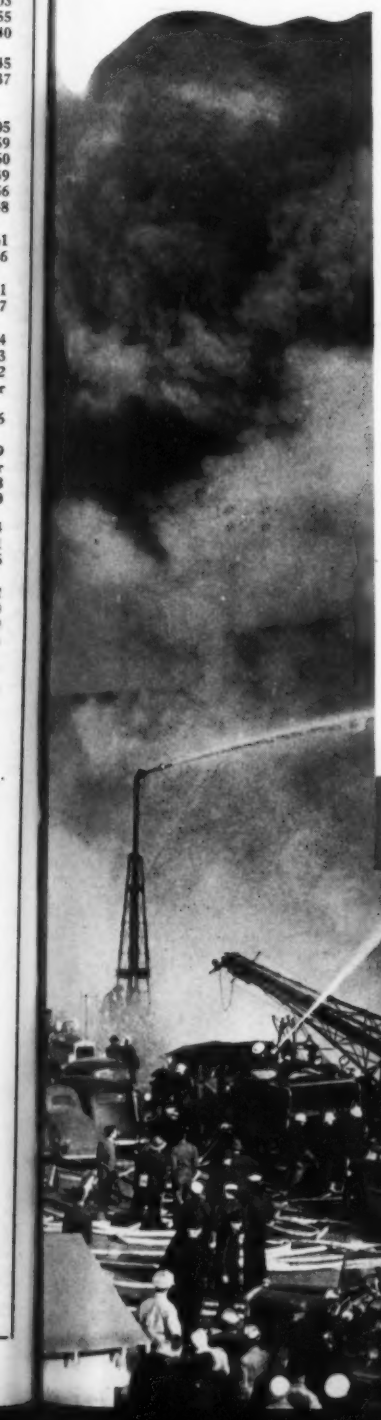
Modern Equipment uses

MANHATTAN FIRE HOSE



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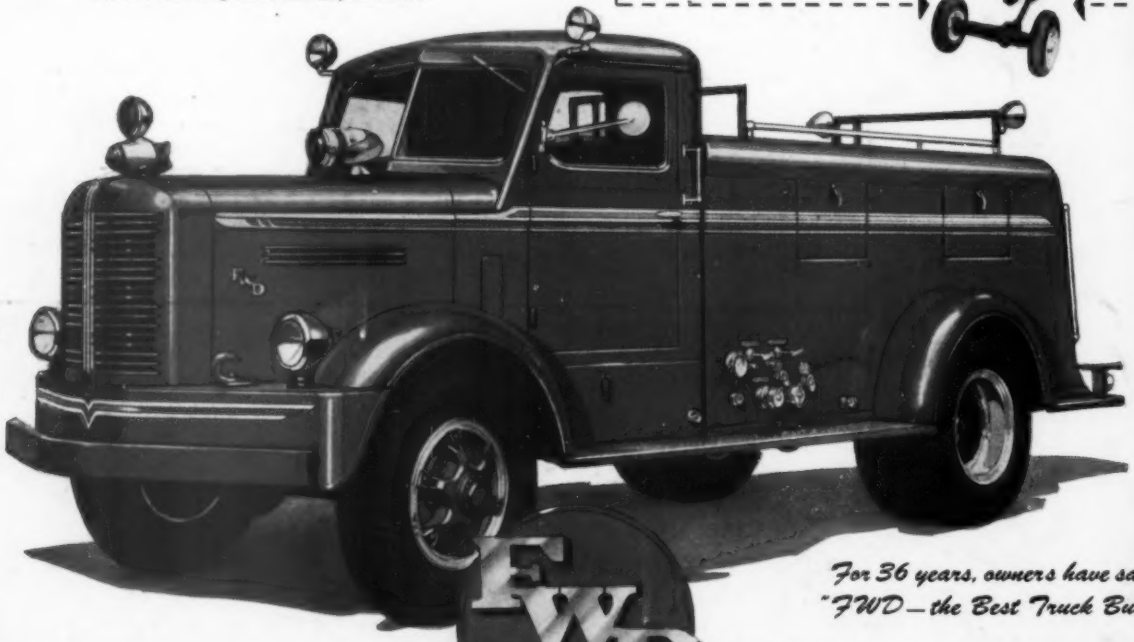

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